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UNITED STATES
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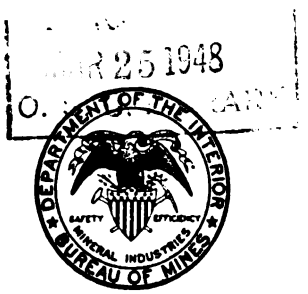
INFORMATION CIRCULAR

CONSUMPTION OF SLAB ZINC IN THE UNITED STATES BY INDUSTRIES, GRADES, AND GEOGRAPHIC DIVISIONS, 1940-45

INCLUDING A SUMMARY OF CONSUMPTION SINCE 1900



BY

ALFRED L. RANSOME

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UNITED STATES DEPARTMENT OF THE INTERIOR - BUREAU OF MINES

CONSUMPTION OF SLAB ZINC IN THE UNITED STATES 1940-45 BY INDUSTRIES, GRADES, AND GEOGRAPHIC DIVISIONS[1]

Including a Summary of Consumption Since 1900

By Alfred L. Ransome[2]

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INTRODUCTION

The consumption of slab zinc in the United States increased sevenfold in less than a half century since 1900. Therein is reflected the innate characteristics of this versatile and nearly indispensable nonferrous metal whose use has grown at more than twice the rate of industrial production. The total metal consumption was substantially stimulated during the two World War periods, which were likewise marked by notable changes in use pattern accompanied by shifts in geographic distribution.

This information circular summarizes basic data collected for many years by the Bureau of Mines, but in particular presents for the 1940-45 period details derived from the comprehensive slab zinc consumption survey inaugurated in 1940.

The total consumption of slab zinc has been broken down into four major categories -- galvanizing, brass products, rolled zinc, and zinc-base alloys -- with minor applications grouped under a fifth heading, other uses. Except for the inclusion of zinc-base alloys with other uses before 1926, the above-named segregation has been shown for the entire period 1900-45. Although a substantial tonnage was taken by all groups in all years, there were large shifts in the use pattern in both World War periods. In both, the Allied Powers depended heavily on the United States for zinc-bearing products, especially those required by war industries. The departures from usual uses were, however, much more marked during the second than in the first period, mainly because the United States could not have met the tremendously expanded war-materiel demands had the greater slab zinc needs of a period of high industrial activity been supplied.

The geography of consumption is known in detail only for 1940-45. Even in that short period, substantial shifts are observable, largely the reaction from conversion to war production in 1940-41 and reconversion to peacetime consumption in 1945. However, there is some evidence of other shifts in consumption centers that appear to reflect longer-term developments.

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A pronounced wartime change also took place in the composition of slab-zinc consumption. Herein was reflected largely the vast ammunition requirements for Special High and Regular High grades that were covered at the expense of others, especially Prime Western.

The tables on which the various figures are based were derived from several sources, the more important being results derived from canvasses conducted by the Bureau of Mines. Minerals Yearbooks and predecessor volumes of Mineral Resources of the United States, and Yearbooks of the American Bureau of Metal Statistics.

ACKNOWLEDGMENTS

Without the wholehearted cooperation of the zinc-consuming industry in answering the Bureau's questionnaires voluntarily, the records obtained - of which this paper reveals only a part - could never have reached the present level of detail, accuracy, and broad coverage enjoyed today. The author acknowledges his appreciation of the advice of Thomas H. Miller, Assistant Director of the Bureau of Mines, who began the initial annual survey and under whose guidance the work was developed, and to C. E. Nighman, Assistant Chief of the Metal Economics Branch, for his helpful criticisms. To Richard H. Mote, Mineral Economist, thanks are due for assistance in compilation of 1945 data, and appreciation is expressed also for the cooperation and assistance of other members of the Metal Economics Branch who aided in preparing the manuscript.

SUMMARY OF SLAB-ZINC CONSUMPTION, 1900-45

Consumption by Uses

Slab zinc is used for a variety of purposes, which can be grouped conveniently under the following basic industries: Galvanizing, brass products zinc-base alloy, rolled zinc, and zinc oxide. Miscellaneous products for which slab zinc is consumed can be grouped as "Other uses." Following development of the Bureau of Mines consumption survey in 1940, a break-down into specific uses by major industry groups was made possible, but prior to 1940 such detail was available only on the basis of estimates and for some years only. Graph 1, prepared from data given in table 1, indicates the general trend of slab-zinc consumption in the United States by major use groups, 1900-45. For the periods 1900-01, 1903-04, 1911-15, and 1918, no data were available from published sources. For these years the total slab zinc consumed represents calculated apparent consumption; the distribution by uses was estimated by the author. From 1926 through 1945, either estimated or measured data have been available to show a separate break-down of zinc used in zinc-base alloys. Before 1926 this use was being developed, and the quantity of zinc consumed for the purpose was minor. Since separate figures were not available, the quantity was included with other uses.

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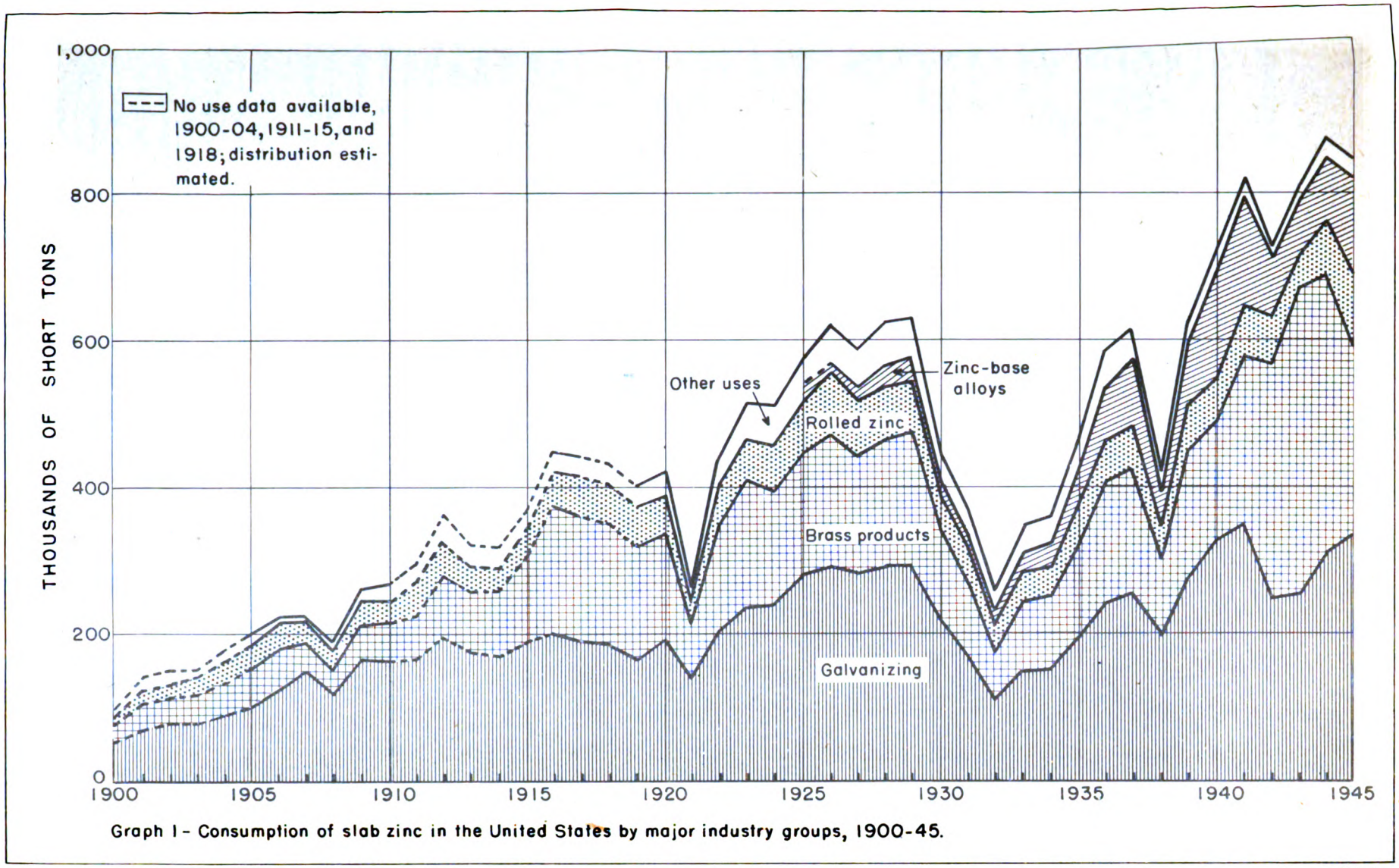

Graph 1 - Consumption of slab zinc in the United States by major industry groups, 1900-45.

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Consumption, Production, Imports, Exports, and Price of Slab Zinc

The general relationships between consumption, production, imports, and exports of slab zinc, with average annual prices, are indicated in graph 2 and were prepared from data in table 1.3/ The main purpose of this report is to make public a mass of detail covering zinc consumption during the second World War. However, some general comments, principally historical in nature, may be useful in interpreting the statistics.

Up to the outbreak of World War I the average use of slab zinc (see graph 3) increased by roughly equal annual quantitative increments. The period was, except for minor panics in 1903 and 1907, one of expanding industrialization, attended by the beginnings of the automobile industry, and one of general business stability. During this period the average price of zinc showed no substantial deviation but a moderate rising tendency, and United States participation in foreign trade in slab zinc was virtually negligible. The ability to meet demands from domestic sources is shown by the near-coincidence of the production and consumption curves.

This ability was strongly marked during the first World War when, because of the foresight of the zinc industry, smelting facilities early were enlarged and further expanded in 1915-16 in response to price stimulation; and ore reserves were much increased by the application of the flotation process. Thus, the United States was in a position virtually to replace the Continental supply sources early lost to the West European countries and later meet its own enlarged needs both for military and civilian uses without restraints. The wide departure of consumption and production curves with the sharp growth of slab zinc exports - and the subsequent abrupt drop - clearly illustrate the United States position. The European demand was accompanied by tremendous price changes from an average of 5.11 cents a pound in 1914 to an average of 14.16 cents, with an all-time record quotation of 27 cents during June 1915. Cessation of internation competitive bidding and growth in reduction capacity then effected a sharp decline to an average in 1917 of 8.9 cents a pound, Prime Western grade. In February 1918 the War Industries Board fixed some zinc prices, but the action was largely ineffective because of the ensuing market decline. In contrast to the Second World War period, the First was control-free. As a consequence the use pattern (see graph 1) was characterized by a great growth in brass products output, with other slab-zinc uses, except for galvanizing, also showing gains.

Graph 3 plots slab-zinc consumption with a 5-year moving average. To the lower part of the chart have been added curves showing relative industrial production 4/ and slab-zinc consumption for 1919-45, for which figures for the first-named are available. This group shows clearly, as might be expected because of zinc's industrial significance, a close correlation between the elements depicted, as well as the effectiveness of the use controls invoked during World War II.

3/ All tables are included in the Appendix.

The Federal Reserve Board index of the physical volume of industrial production 1935-39 -100 is compared with slab-zinc consumption, using the same base period.

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The use of slab zinc declined from the 1916 high but was reverting seemingly to the prewar trend when sharply contracted by the postwar depression in 1921. It then recovered rapidly, and in 2 years reached a new high mark that was equaled or surpassed each year to 1929. This 7-year period (1923-29) was marked by a great expansion in automobile production and by a sustained high level in building activity. These two factors probably were instrumental in maintaining the zinc-consumption index well above that of industrial activity, but with little departure from the general trend. Conversely, during the severe depression that followed, the drop in automobile production and in building construction carried the zinc index below that of industrial production. In the same general period exports, largely to Europe during the postwar rehabilitation years, accounted for much of the difference between production and consumption. The elasticity of domestic production continued in evidence, as imports-- both metal and ore-- were negligible, too small. Changes in the average annual prices in 1923-29 were moderate, but the prices on the whole were above those of the prewar years.

The depth of the depression (which had become world-wide) for slab zinc was reached in 1932, when all activity was at its lowest. Consumption and production had fallen to the 1909 level or below, and the average price of Prime Western at St. Louis sank to the lowest recorded figure at 2.83 cents a pound. From 1932 to 1937 a slow but steady recovery was manifest and possibly was, in the last few years, accentuated by European rearmament. In 1938, however, this trend was reversed as industrial recovery in the United States faltered and when international policies based on appeasement were believed widely to promise postponement of early war.

With the outbreak of war in 1939, demands for national defense and needs of the Western European nations, which within weeks had lost the Polish, Belgian and French supply sources, rose sharply. By 1941, when the United States became a cobelligerent, virtually all of an already augmented smelter capacity was being utilized, domestic mine production was inadequate, and heavy dependence was put on foreign metal and ores - more than a half million tons zinc content in 1943, the peak year - a condition that continued through 1945. Actually a zinc shortage had become acute in 1940, and producers had undertaken consumer rationing. Government priority and export controls were instituted early in 1941 and converted to complete allocation control a year later. In this manner, not only was consumption limited but industrial distribution was greatly modified as described and illustrated in detail hereafter. Controls were eased before the end of the war and fully revoked in the course of 1945; but reversion to the normal use pattern was still incomplete, and although a decline in consumption from the wartime peak was then indicated, it nevertheless was approximately one quarter above the 1929 peacetime record.

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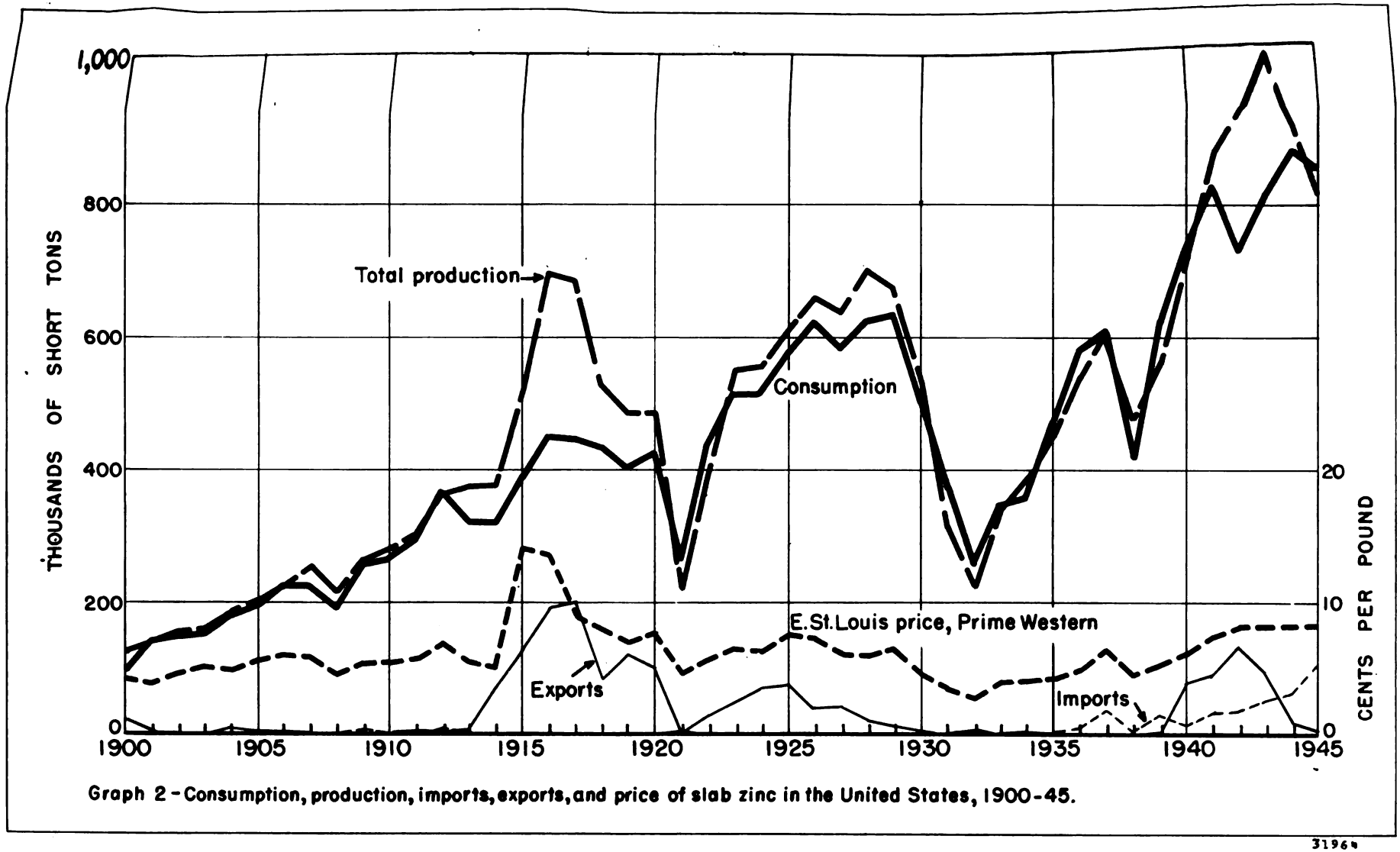

Graph 2 - Consumption, production, imports, exports, and price of slab zinc in the United States, 1900-45.

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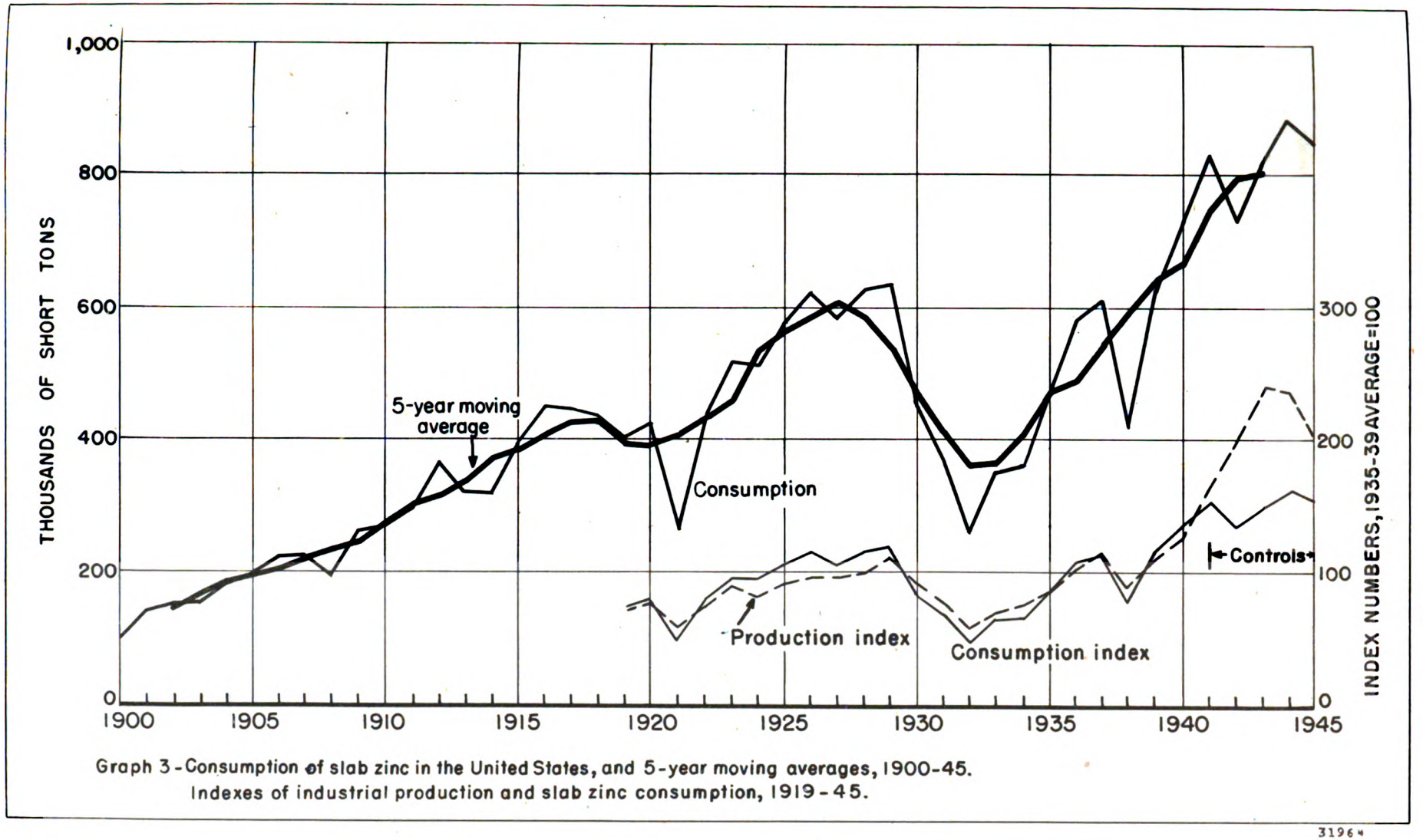

Graph 3 - Consumption of slab zinc in the United States, and 5-year moving averages, 1900-45.
Indexes of industrial production and slab zinc consumption, 1919 - 45.

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From the 1938 level of 4.61 cents a pound, the price rose little until September 1939 and gradually moved upward thereafter until September 1940, when a ceiling price of 7.25 cents was fixed. In October 1942, this was increased to 8.25 cents and remained there through the period under review. In another respect the Second World War period differed materially from the First, that is, in foreign trade. Imports of slab zinc, theretofore negligible, had begun to rise appreciably by 1937, fluctuated during the ensuing 3 years, and then rose uninterruptedly through 1945. Exports increased sharply from a few thousand tons in 1939 to a peak in 1942 approximately two-thirds that of 1917, and dropped abruptly almost as much to 1945. In the full war period 1939-45, there was a net export (all grades) of about 100,000 tons and less than 65,000 tons during the period of controls. The narrow margin illustrates the inability of even the expanded smelting industry, which produced almost 1 million tons of slab zinc at the peak to meet the tremendous demands for war purposes.

CONSUMPTION OF SLAB ZINC IN THE UNITED STATES BY INDUSTRY, GRADE, AND GEOGRAPHIC DIVISIONS, 1940-45

From the basic data obtained by direct consumer canvass, detailed information on consumption of slab zinc by industry, by grades, and according to geographic distribution, is available from 1940. These data have been the basis for a condensed presentation in the Minerals Yearbook since 1940. The yearbook for 1946 and subsequent volumes will carry forward the record in greater detail.

The industries covered by the survey include galvanizing, brass products, zinc-base alloys, rolled zinc, zinc oxide, 5/ and miscellaneous smaller consumers of slab zinc grouped under the general heading "Other uses." For the sake of statistical uniformity, minor quantities of remelt zinc consumed by industry have been excluded. The grades included under the general term slab zinc are: Special High Grade, Regular High Grade, Intermediate, Brass Special, Selected, and Prime Western, either primary or secondary, but produced by distillation, redistillation, or electrolytically. Specifications for these six grades are listed on page 8.

The geographic break-down of zinc consumption is given by industry use in each State and according to the following geographic divisions:

I. New England States:
   Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island.

II. Middle Atlantic States:
   New York, Pennsylvania, New Jersey.

5/ The greater portion of zinc oxide is made directly from ore. It is to be noted that text, figures and tables give only quantities of slab zinc used therefor.

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III. South Atlantic States:
Virginia, North Carolina, South Carolina, Georgia, Florida, District of Columbia, West Virginia, Maryland, Delaware.

IV. East North Central States:
Wisconsin, Michigan, Illinois, Indiana, Ohio.

V. East South Central States:
Kentucky, Tennessee, Mississippi, Alabama.

VI. West North Central States:
Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

VII. West South Central States:
Arkansas, Louisiana, Oklahoma, Texas.

VIII. Mountain States:
Montana, Idaho, Wyoming, Utah, Colorado, Nevada, Arizona, New Mexico.

IX. Pacific States:
Washington, Oregon, California.

Standard Specifications for slab zinc

B 6 -- 37 1/

Grade	Allowable maximum content, percent.				
	Lead	Iron	Cadmium	Aluminum	Combined lead, iron cadmium
Special High Grade	0.007	0.005	0.005	None	0.010
Regular High Grade	.07	.02	.07	None	.10
Intermediate	.20	.03	.50	None	.5
Brass Special	.60	.03	.50	None	1.0
Selected	.80	.04	.75	None	1.25
Prime Western	1.60	.08	....	....	....

1/ Adopted by the American Society for Testing Materials, 1937.

B 6 -- 46 2/

Grade	Allowable maximum content, percent 3/				
	Lead	Iron	Cadmium	Aluminum	Combined lead, iron cadmium
Special High Grade	0.006	0.005	0.004	None	0.010
Regular High Grade	.07	.02	.07	None	0.10
Intermediate	.20	.03	.50	None	0.50
Brass Special	.60	.03	.50	None	1.00
Selected	.80	.04	.75	None	1.25
Prime Western	1.60	.08	....	....	....

2/ Adopted by the American Society for Testing Material, 1946.
3/ Not regularly analyzed for tin. If used for die castings, purchaser may reject if tin exceeds 0.003 percent.

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A graphic summary of the comparative changes that took place during the 6 years 1940 to 1945 in consumption of slab zinc, by industry, grades, and geographic divisions is illustrated by figure 1. Although analyses are given in greater detail in subsequent sections of this paper, it is of interest to point out the principal changes shown by the pie charts in this figure that were a direct result of the conversion of the zinc consuming industry from a peace time to war economy and the subsequent reconversion.

The charts illustrating consumption by industry show clearly the marked rise in the use of zinc for brass products from 22.2 percent in 1940 to 51.3 percent in 1943 and the subsequent decline to 30.5 percent in 1945. This change reflects the heavy demand for cartridge brass for the manufacture of shell cases and small arms ammunition. The use of zinc for galvanizing showed a corresponding decline from 45.1 percent in 1940 to 31.0 percent in 1943 followed by a rise to 39.4 percent in 1945. Consumption of zinc for zinc-base alloys decreased from 20.0 percent in 1940 to 9.6 percent in 1943, then started upward and reached 15.4 percent in 1945. Zinc for galvanizing was severely curtailed during the war, except for certain war material, and zinc for zinc-base alloys, as well as being curtailed, declined as a direct result of the cessation of automobile manufacture, an industry that had used large quantities for die-cast parts. Other industrial uses of zinc were also curtailed, principally to release zinc for use in the all-important expanded brass-mill capacity for the manufacture of cartridge brass.

A review of consumption, by grades, shows the close relationship to the aforementioned use pattern. The production of cartridge brass requires the use of high-quality zinc, principally Special High Grade and Regular High Grade. So does the manufacture of zinc-base die castings. As requirements for brass climbed upward, so did the consumption of the two highest grades of zinc. Special High Grade increased from 26.2 percent in 1940 to 28.7 percent in 1943, and even more remarkably, Regular High Grade advanced from 12.8 percent in 1940 to 26.6 percent in 1943. Thus the increased use of the two highest grades of zinc for brass was made possible, in part, by the sharp drop in the zinc-base alloy industry. A large share of the balance of high-grade zinc for brass came from the supply of lower-grade zinc, principally Prime Western, which was further refined into high-grade metal at special redistillation plants. Inasmuch as Prime Western grade is used largely for galvanizing, the curtailment of galvanizing released needed lower-grade metal for this process of further refining. By 1945 the picture shows the beginning of a return to peacetime economy. Prime Western consumption increased along with the increased use of zinc for galvanizing. The use of the highest two grades of zinc had decreased somewhat, corresponding to the sharp decline in brass manufacture which, in turn, was largely balanced by an advance in the consumption of zinc for zinc-base alloys.

The greatest apparent change in the geographical distribution of consumption of slab zinc was the shift in percentage consumed in the New England States from 12.7 percent in 1940 to 21.9 percent in 1942. This was

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almost entirely the result of the increased brass production from expanded plant facilities which already existed in that area. Though not apparent on the charts in figure 1, a more important shift in brass manufacture was to the East North Central States (division IV.). As this area includes many large steel mills the consumption of zinc for galvanizing is normally heavy. The decline in zinc used for galvanizing was virtually balanced by the increase for brass manufacture, with the result that the over-all consumption in division IV decreased only slightly - from 46.6 percent in 1940 to 42.3 percent in 1942. The subsequent rise to 47.7 percent in 1945 was due to the closing down of part of the brass mill capacity in the area and return to normal of the galvanizing industry. The shift downward of consumption of zinc in the Middle Atlantic States (division II), although slight, reflects the contailment of galvanizing, also a prominent industry in this area.

Consumption of Slab Zinc by Grades and Industry Groups

A discussion of consumption of slab zinc by grades is so closely connected with consumption according to industry, and vice versa, that the two topics are treated together. Basic data covering results of the Bureau of Mines annual zinc consumer canvass by grades according to industry, 1940-45, in the United States are given in table 2. Remelt zinc is excluded, and foreign zinc of all grades is shown as a separate total in order that figures for each year of the period could be presented on a comparable basis. Consumption of slab zinc by industry and product, 1940-45, is shown in table 3. The figures are the same as given in tables of consumption of slab zinc in the Minerals Yearbook chapters on Zinc, 1944 and 1945, and include a nominal quantity of remelt zinc in 1944 and 1945.

Using the data given in table 2, figure 2 was drawn to show the annual changes in percentage consumed of each grade of zinc by the major industry groups. In this instance the data used for specific grades are restricted to domestic slab zinc. Foreign zinc, given as a total in table 2, is not separable according to grade for all the years in the period 1940-45.

Figure 2 shows the well-defined relationship between Prime Western zinc and galvanizing, Special High Grade zinc and zinc-base alloys, and Regular High Grade zinc and zinc oxide. Although Prime Western consumed for all uses is slightly less than the total slab zinc consumed for galvanizing, (table 2) the quantity so consumed in this industry is consistently close to the total each year. The pattern of Special High Grade consumed for zinc-base alloy manufacture varies widely from the total of this grade consumed for all uses, largely owing to its use in brass. It is evident, however, that the consumption of zinc in the zinc-base alloy industry is confined essentially to Special High Grade zinc. The same general relationship holds for Regular High Grade and the manufacture of zinc oxide. Brass products and rolled zinc on the other hand, use more than one grade of zinc and in variable quantities. In the case of brass products, Regular High Grade, Special High Grade, and Intermediate -- in descending order of importance -- together account for the greater proportion of the total slab zinc consumed in this industry segment. Brass Special, Regular

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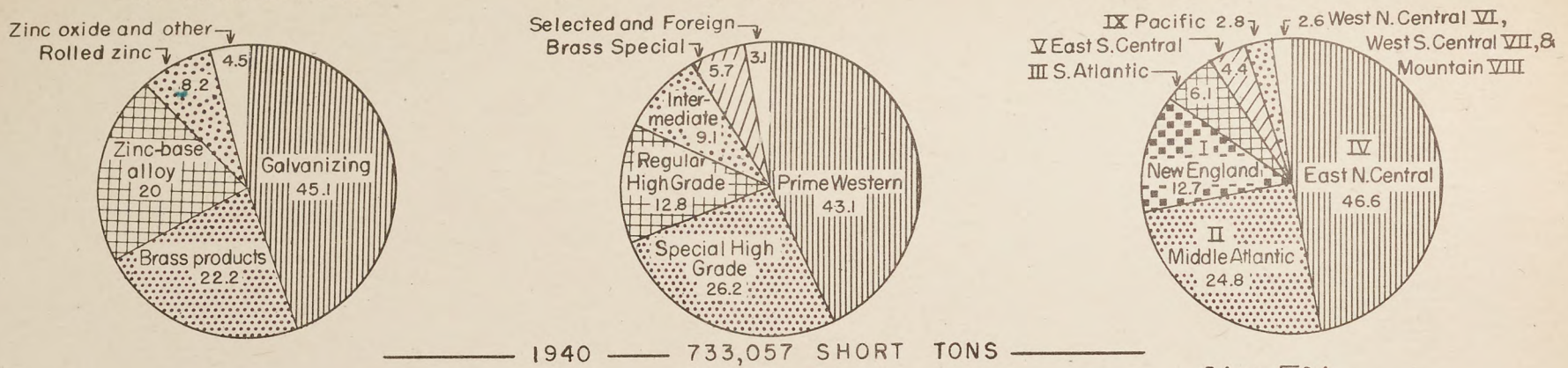

Fig. 1 – Total consumption of slab zinc in the United States in percent, by industries, grades, and geographic divisions, 1940-45.

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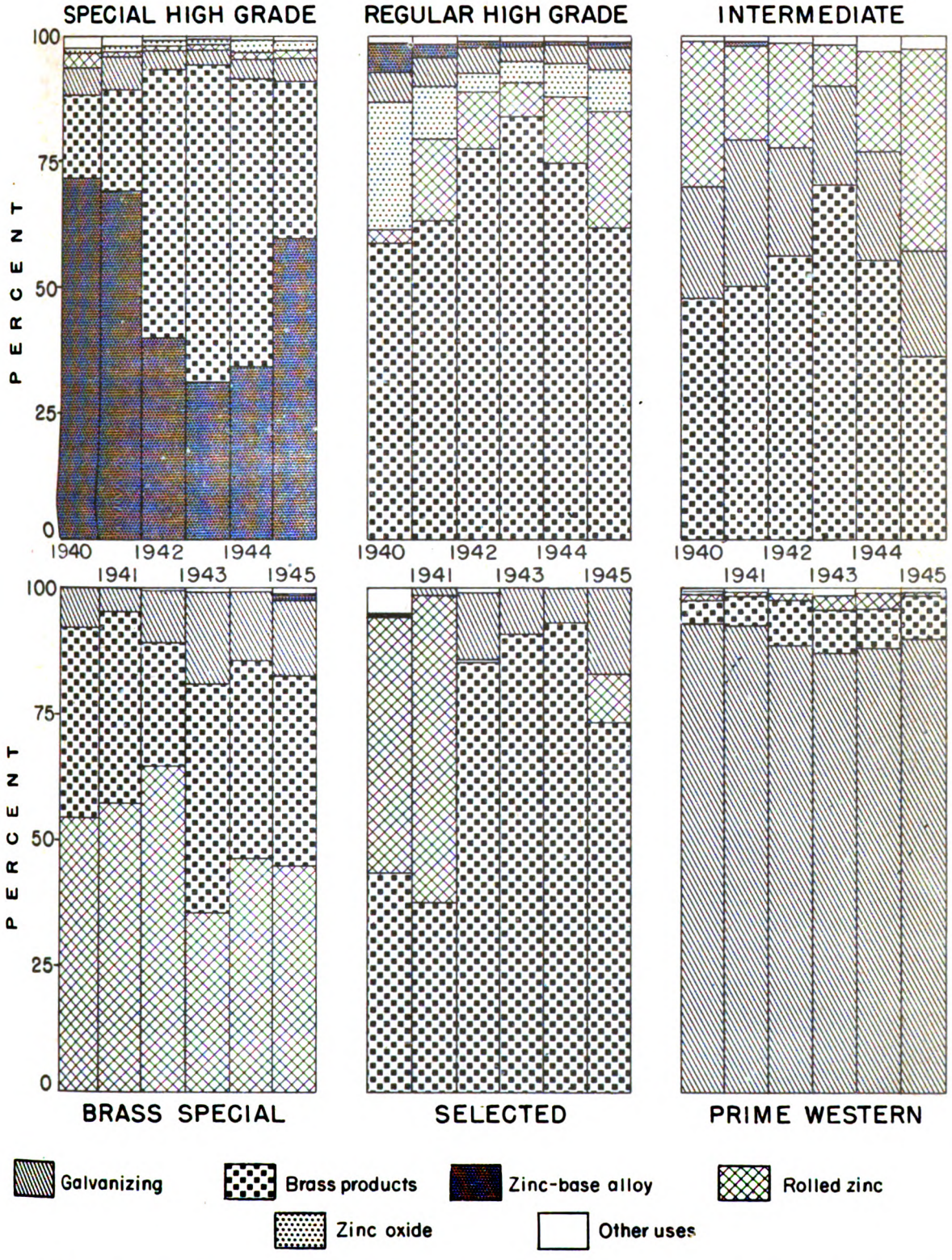

Fig. 2- Percent of each grade of domestic slab zinc consumed for major industrial uses, 1940-45.

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High Grade, and Intermediate -- in descending order of importance -- together account for the greater proportion of the total slab zinc used in the manufacture of rolled zinc.

The percentage apportionment, by uses, of the total quantity of each of the six commercial grades of slab zinc consumed each year, 1940-45, is illustrated by figure 2. This demonstrates, in a more direct manner, the shift in industrial use of specific grades of slab zinc previously discussed with reference to figure 1.

Consumption of Slab Zinc by Geographic Areas

The annual geographic distribution of slab zinc consumed in the United States, 1940-45, is given in the tables 4-10. In each instance where consumption data for a State was reported by less than three companies the totals have been combined in such a manner that one company's operation is not revealed. The relative rank of each State, with regard to consumption, is given so that year-to-year changes can be compared readily. The salient data from all but tables 9 and 10 have been graphically portrayed on accompanying outline maps of the United States, figures 3 through 7.

Consumption of Slab Zinc for All Uses (table 4). -- The distribution of the total slab zinc consumed each year for all uses according to geographic divisions and by States as shown in table 4 gives an over-all summary of the distribution pattern. The average annual consumption of slab zinc for the 6-year period is illustrated geographically by figure 3. During the period, slab zinc was reported consumed in 42 States and the District of Columbia, Illinois ranking first with an annual average of 123,677 short tons and Delaware and North Carolina tying for last place with a 1-ton average. Division IV, comprising Illinois, Indiana, Michigan, Ohio, and Wisconsin, ranked first as a geographic area, with an annual average total of 368,176 tons. Nearly half of the average annual total slab zinc consumed in the United States was accounted for in this division. Divisions II and I, in descending order of rank, together with division IV, consumed 85 percent of the average total slab zinc used. The Mountain States, of division VIII consumed the least, accounting for only 0.2 percent of the total.

Consumption of Slab Zinc for Galvanizing (table 5). -- On the basis of data given in table 5, figure 4 was constructed to show the geographic distribution of slab zinc consumed for galvanizing during 1941, 1942, and 1945. These years represent the periods of maximum and minimum consumption and the last year, respectively, of the 6-year period. In 1941, 350,854 short tons of slab zinc was used for galvanizing in 32 States, Pennsylvania being the leader with 85,095 tons, closely followed by Ohio with 77,414 tons. Louisiana came last. The greatest concentration of zinc consumption for galvanizing was in division IV (Illinois, Indiana, Michigan, Ohio, and Wisconsin), which accounted for 43.1 percent of the total for the United States. Close to three quarters of the total consumption was centered in the East North Central and North Atlantic States of the fourth and second divisions.

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In 1942 consumption dropped to 247,491 tons in the same States, but the rank of the top four States remained unchanged. The fourth division was first, with 39.2 percent of the total consumed. The year 1942 represents the period of the greatest curtailment in the use of zinc for galvanizing during the war.

The beginning of the return to peacetime industrial economy in 1945 is shown by the increase in slab-zinc consumption for galvanizing to 338,843 tons. Two new States, New Hampshire and Utah, brought the total to 34 which reported zinc used for galvanizing. The quantities involved were negligible, however, and do not represent a significant shift geographically. A comparison of 1945 with 1941 does indicate a possible shift in concentration westward. Division IV, still number 1 in rank, increased only slightly in percentage of the total, but Ohio became the number 1 State. Division II decreased from 29.4 to 24.1 percent, and division VI advanced from 1.5 to 2.0 percent.

Consumption for Slab Zinc for Brass Products (table 6). -- In 1940, 162,614, short tons of slab zinc was consumed for brass products in 18 States. Connecticut was number 1 in rank, and because of the strong concentration in a relatively small area, division I (the New England States) accounted for half of the total slab zinc consumed in the United States for brass products. The East North Central States of division IV came second, with 28.7 percent, and division II third with 19.9 percent. These data are shown graphically in figure 5.

Because of wartime demand for high-quality brass, new plants were built and existing facilities expanded; and by 1943, consumption of slab zinc for this purpose reached a peak of 419,079 tons. Division IV was first in quantity of slab zinc consumed (44.8 percent) followed by division I (37 percent). Although Connecticut retained first place among States, with 146,695 tons of slab zinc consumed, Wisconsin rose from seventh place in 1940 to second place in 1943, Indiana advanced in rank from fourteenth to sixth, and Ohio from fifth to third.

By 1945 the brass industry had begun to return to normal, and during the year 258,169 tons of slab zinc was consumed for this use in 29 States and the District of Columbia. Connecticut still was in first place among the States, and division I as a total consumed 39.8 percent of the United States total. Division IV remained in first place with 40.7 percent, but the trend appears to be toward a return to the prewar geographic relationship. Because of the shut-down of much of the brass-plant capacity constructed during the war, Wisconsin dropped to fifth, Indiana to ninth, and Ohio to fourth place. Illinois, which was in second place in 1945, actually had reached that position in 1944, with 52,832 tons of slab zinc consumed for brass products compared with 13,529 tons in 1940 and 35,607 tons in 1943. No significant permanent geographic shifts are apparent outside of the usual centers of heavy concentration. Several new States were added to the list of these consuming slab zinc for brass products, but in general the quantities involved were small and restricted to other than true brass mills.

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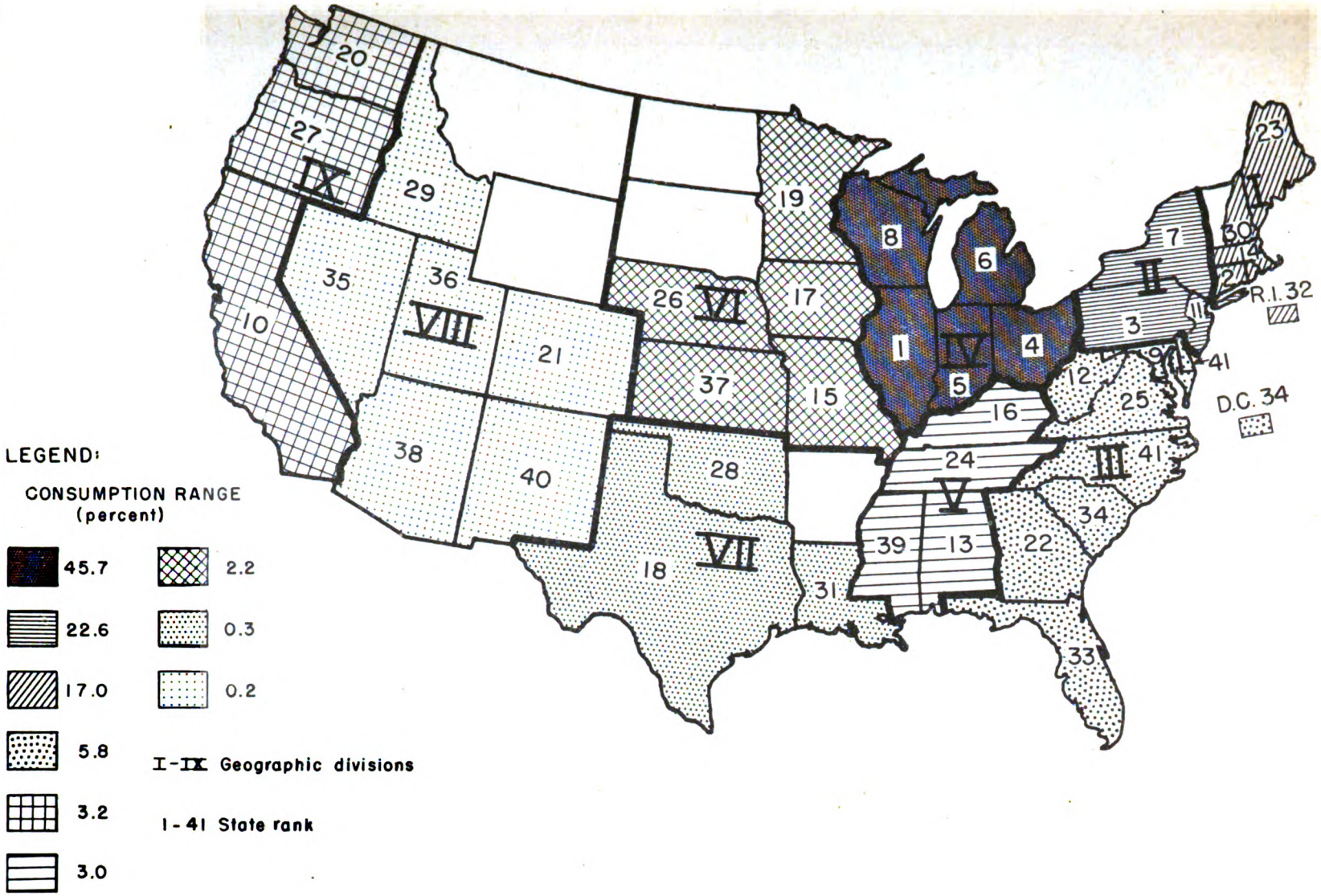

Fig. 3 – Geographic distribution of average annual consumption of slab zinc, 1940-45.

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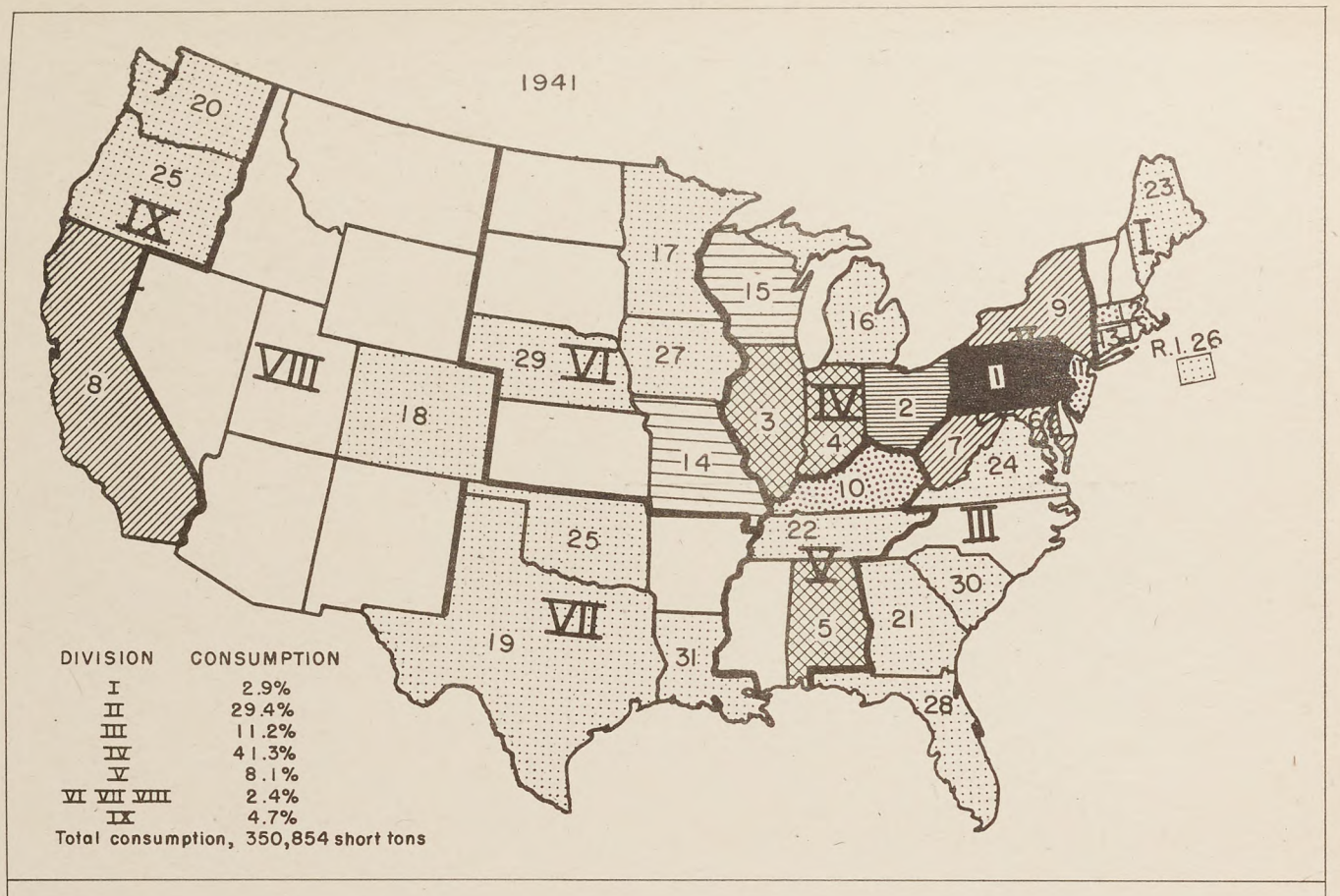

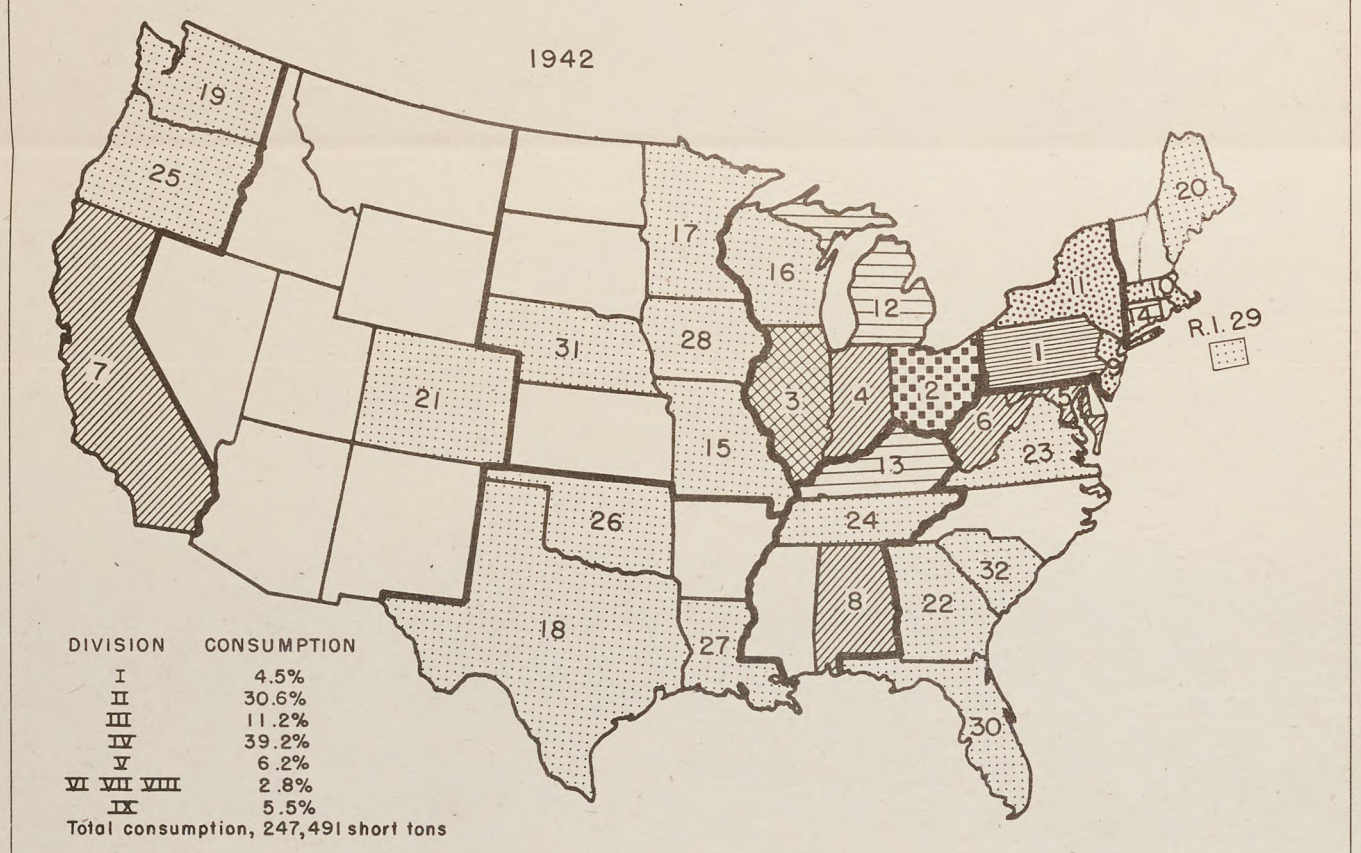

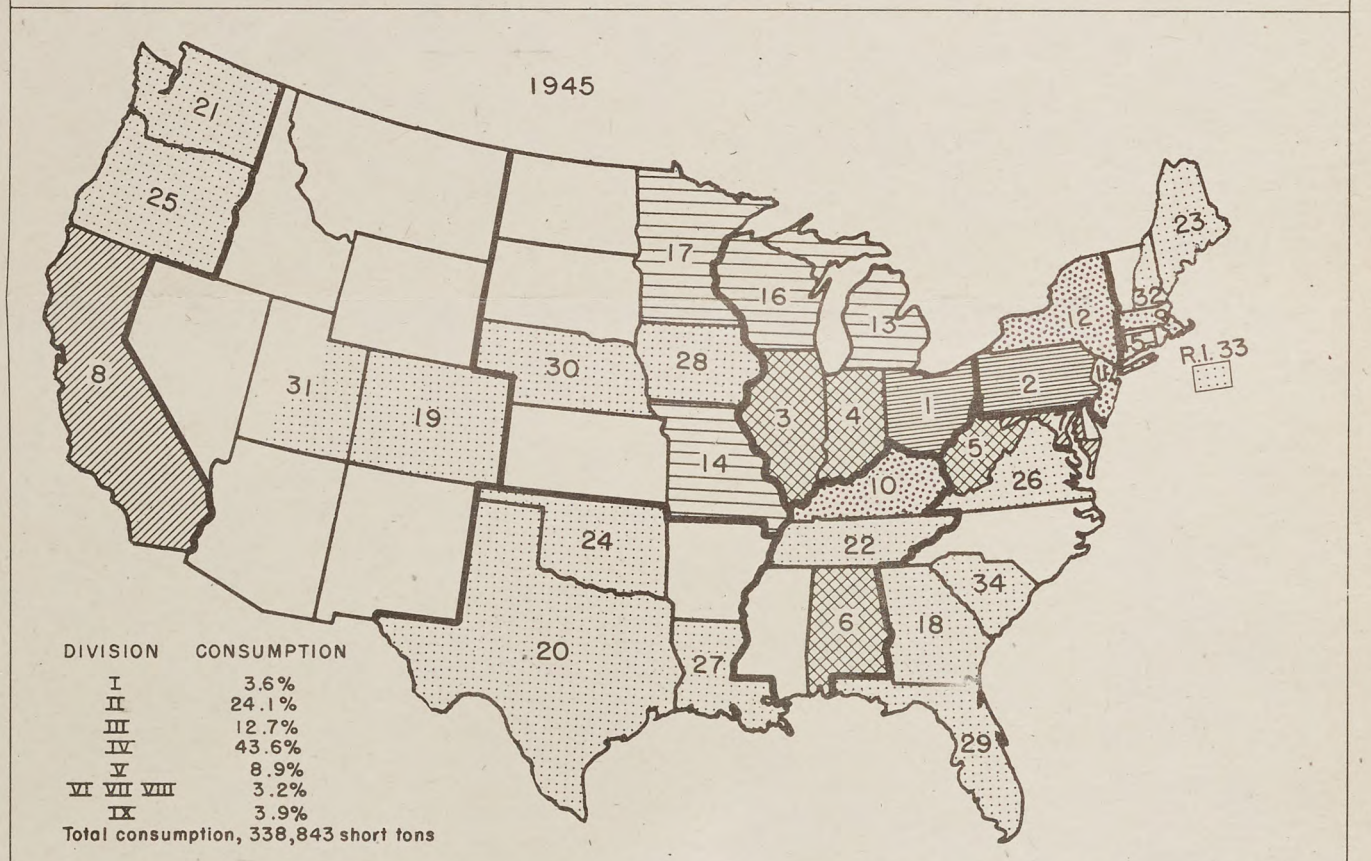

LEGEND:

CONSUMPTION RANGE
(thousands of short tons)

- 80 and over
- 60-80
- 40-60
- 20-40
- 10-20
- 5-10
- 2.5-5
- Below 2.5

I-IX Geographic divisions

1-34 State rank

GALVANIZING

Fig. 4 - Geographic distribution of slab zinc consumed in 1941 (maximum), 1942 (minimum), and in 1945.

31984

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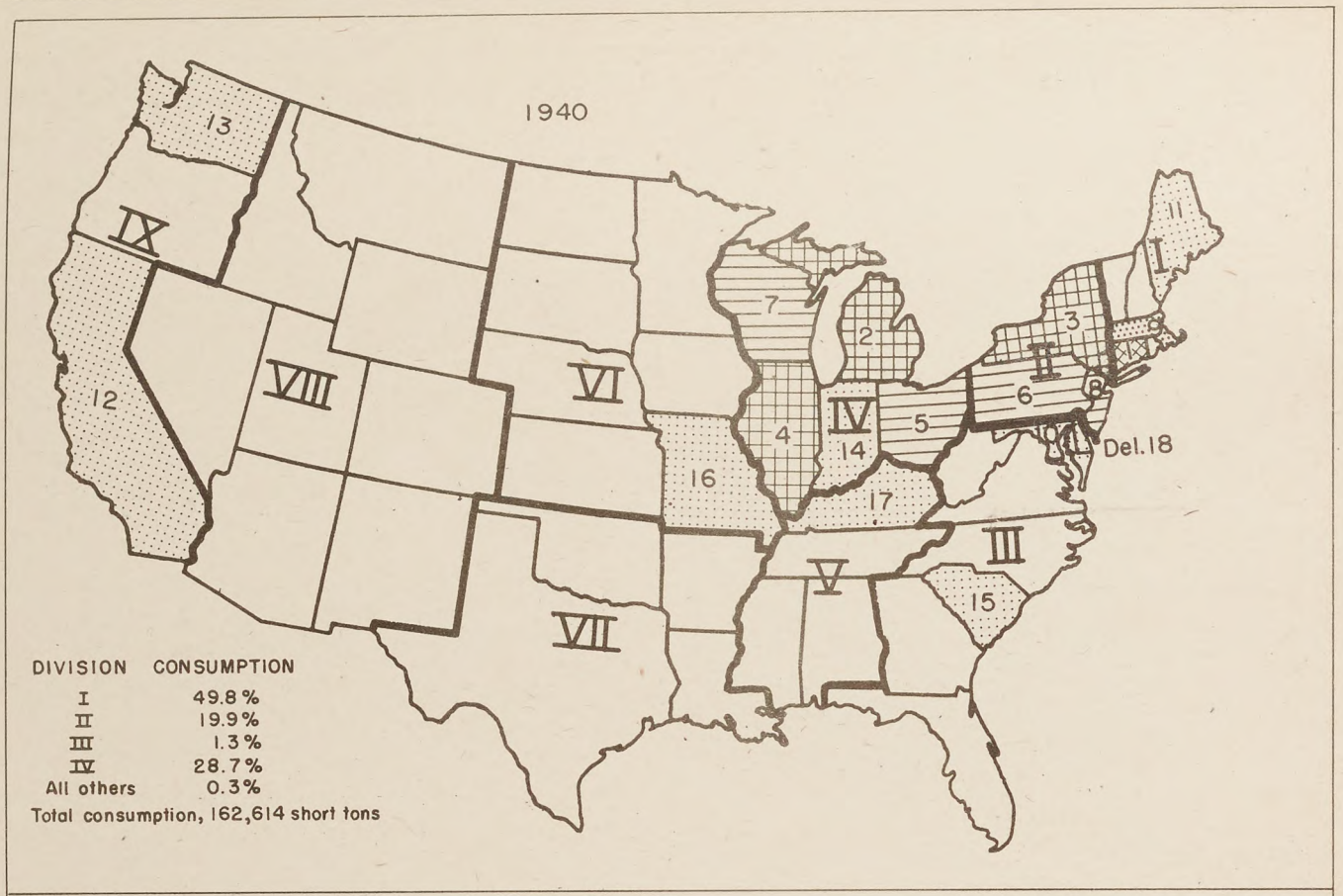

BRASS PRODUCTS

Fig. 5 - Geographic distribution of slab zinc consumed in 1940 (minimum), 1943 (maximum), and in 1945.

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Consumption of Slab Zinc for Zinc-Base Alloys (table 7). -- The area of greatest concentration of slab zinc consumed for zinc-base alloys is division IV, which includes Illinois, Indiana, Michigan, Ohio and Wisconsin. This is accounted for in greater part by the fact that the automobile industry-also centered in the area-is the largest customer of zinc-base alloys, principally for die-cast parts and assemblies such as interior hardware, fuel pumps, and carburetors, and radiator grilles. In 1941, the last prewar year of full-scale automobile production, 146,721 short tons of slab zinc was consumed for zinc-base alloys, two-thirds being consumed in division IV, largely in Illinois.

As shown by data in table 7 and graphically presented in figure 6, it is apparent that little change, geographically, took place during the 6-year period, 1940-45. The quantity of slab zinc consumed for zinc-base alloys decreased to 76,325 tons in 1943 as a result of wartime curtailment and advance to 130,800 tons in 1945 following the war, but the general pattern of distribution remained virtually the same. Consumption in California increased from 6,340 tons in 1940 to a high point of 11,765 tons in 1942, decreased to 5,630 tons in 1944, and advanced again to 8,218 tons in 1945. The spurt upward, at a time when the over-all use of zinc for alloys was curtailed, resulted from the wartime demand by the airplane industry in California for zinc-base alloy dies used in stamping out plane parts.

Consumption of Slab Zinc for Rolled Zinc (table 8). -- Slab zinc is consumed for the manufacture of rolled zinc at plants in eight States. Because publication of totals for each of the eight States except Illinois would disclose individual company operations (less than three operating), these totals have been combined in table 8. In order to show graphically the pattern of distribution of slab zinc consumed (figure 7), each State total has been classified according to a series of quantitative limits arbitrarily chosen as adequate to indicate changes.

A comparison of the years 1940, 1943, and 1945 shows that, although the quantity of slab zinc consumed for the purpose had changed widely, the geographic pattern varied but little. Illinois and Indiana, ranking first and second, respectively, in division IV accounted for the greater quantity of slab zinc consumed for rolling in the United States. Including Iowa with division VI, these three States accounted for three-fourths of the total. A gradual increase from 73.3 percent in 1940 to 81.6 percent in 1945 would seem to indicate a trend toward a distribution shift from the States in division I, II, and III.

Consumption of Slab Zinc for Zinc Oxide (table 9). -- Because of the small number of companies consuming slab zinc in the manufacture of zinc oxide in three States, four in 1941, it was impossible to prepare table 9 in the usual way to show specific quantities. To do so would have revealed individual company operations in each State. However, the table is included for the record, principally to show the relative rank of each State and the totals each year. For the above reason, plus the fact that the distribution pattern is definitely restricted, no graphic illustration was prepared.

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Consumption of Slab Zinc for Other Uses (table 10).-- For the record, table 10 was prepared to show the distribution, by States, of the minor quantity of slab zinc consumed for such purposes as slush castings, wet batteries, desilverizing lead, light-metal alloys (other than zinc-base alloys), zinc dust, sundry chemicals, and bronze powder. Because of the relatively small quantities involved and the somewhat erratic changes from year to year, a graphic illustration of geographic distribution is not practicable. It is doubtful if any indicated shift in the distribution pattern would prove significant.

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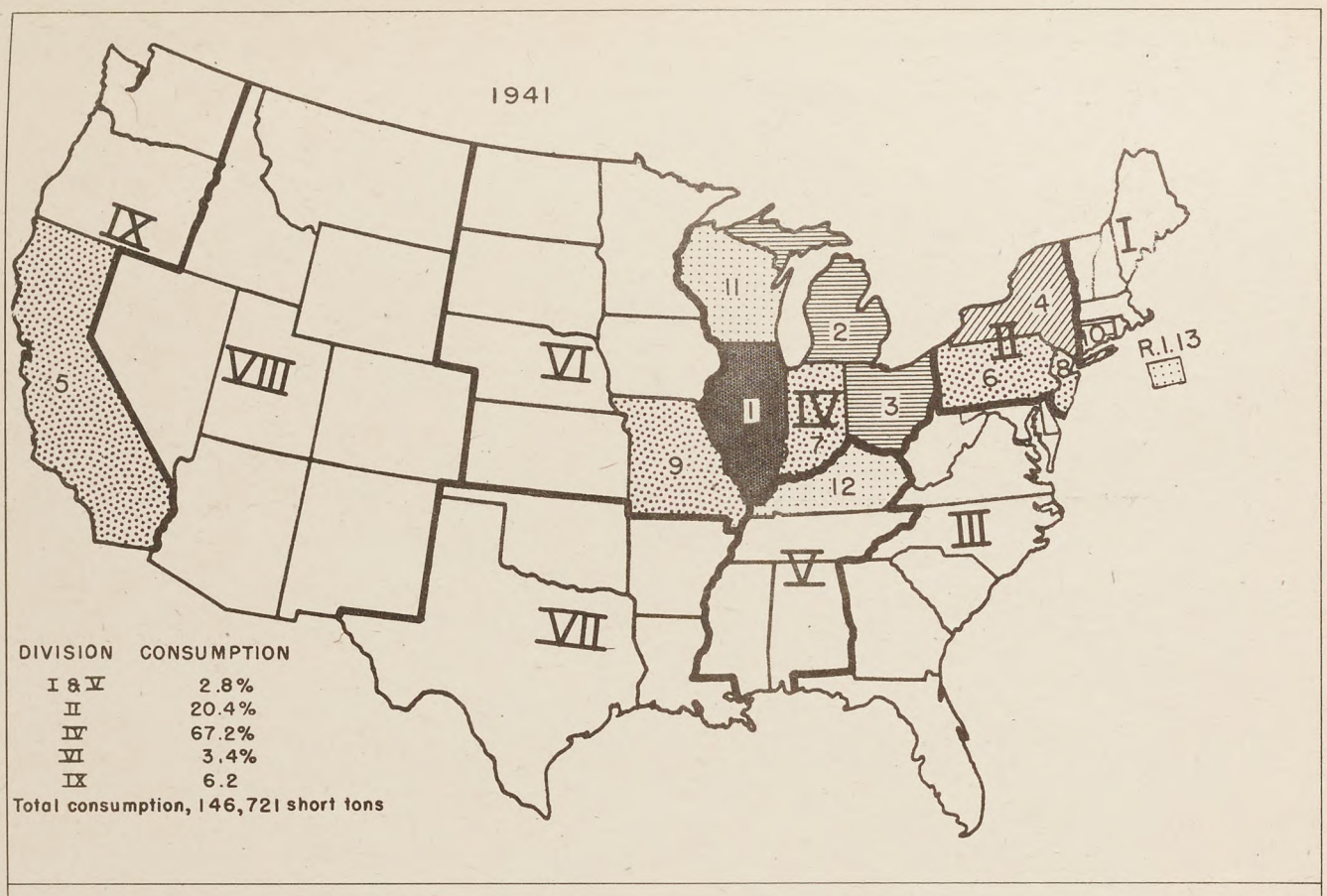

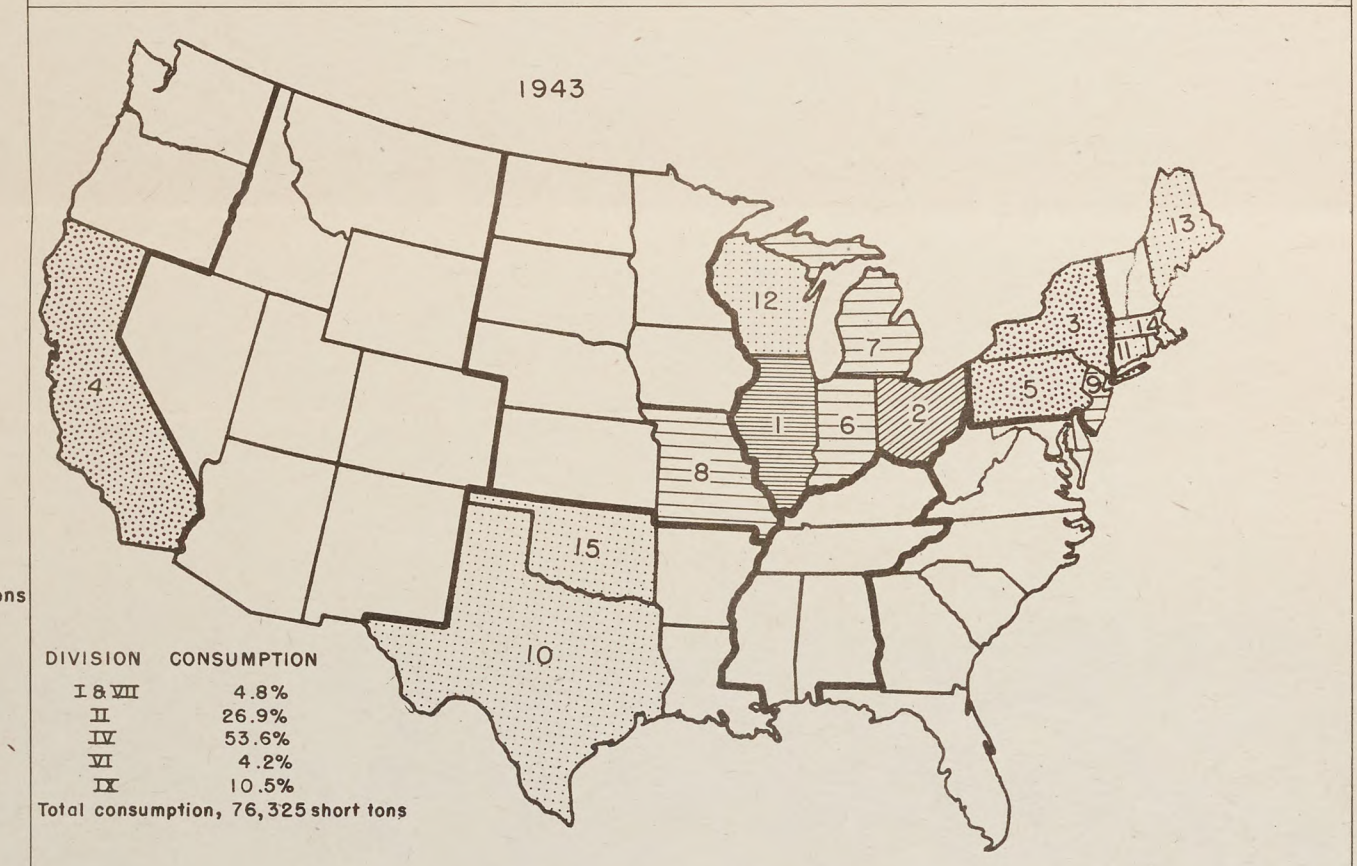

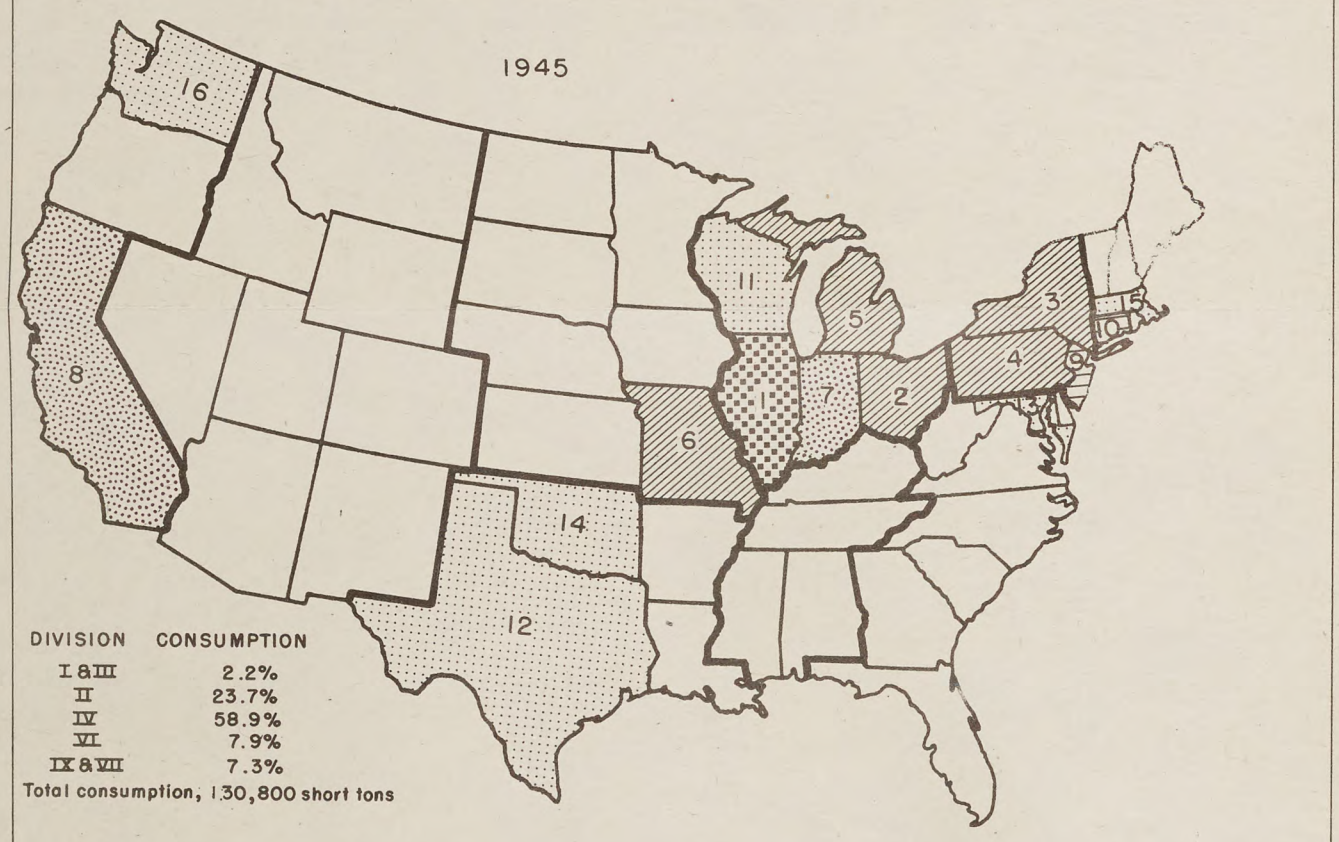

LEGEND:

CONSUMPTION RANGE
(thousands of short tons)

- 40 and over
- 30-40
- 20-30
- 10-20
- 5-10
- 2.5-5
- Below 2.5

I-IX Geographic divisions

1-16 State rank

ZINC-BASE ALLOYS

Fig. 6 - Geographic distribution of slab zinc consumed in 1941 (maximum), 1943 (minimum), and in 1945.

31964

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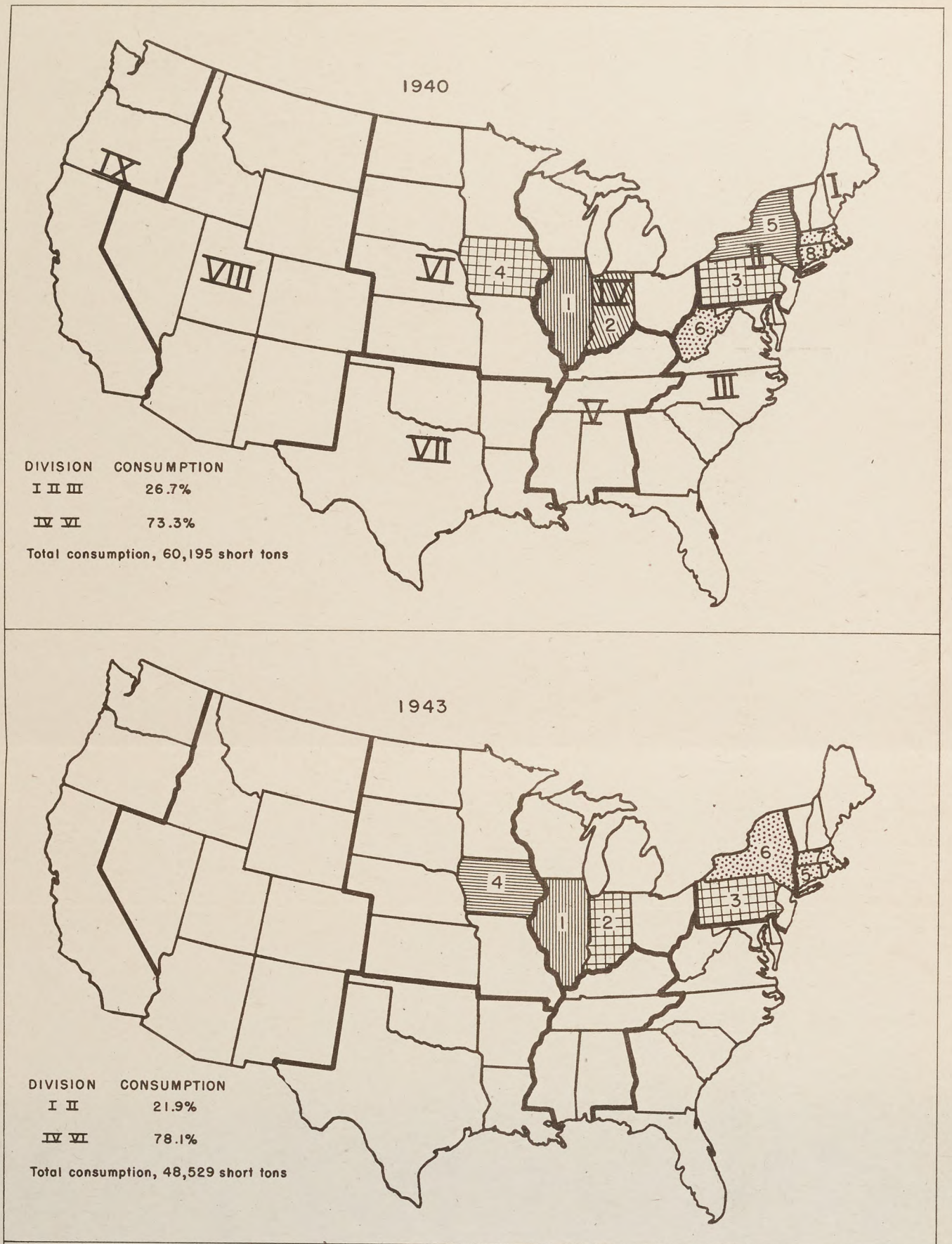

LEGEND:

CONSUMPTION RANGE
(thousands of short tons)

- 40 and over
- 30 - 40
- 20 - 30
- 10 - 20
- 5 - 10
- 2.5 - 5
- Below 2.5

I - IX Geographic divisions

1 - 8 State rank

ROLLED ZINC

Fig. 7 - Geographic distribution of slab zinc consumed in 1940 (first), 1943 (minimum), and in 1945 (last and maximum).

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TABLE 1.— Salient statistics on slab zinc in the United States, 1900 - 45.

Consumption by major industry groups, production, exports and imports, and price. 1/

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Year	Consumption						Production	Price Prime Western E. St.Louis (cents per lb)	Exports 2/ (short tons)	Imports 3/ (short tons)
	Galvanizing (short tons)	Brass products (short tons)	Rolled zinc (short tons)	Zinc-base alloy (short tons)	Other uses N.E.S. (short tons)	Total (short tons)	Total (short tons)			
1900	(55,000)	(23,000)	(10,000)	(4)	(11,399)	99,399	123,886	4.24	22,401	884
1901	(70,000)	(35,000)	(20,000)	(4)	(16,697)	141,697	140,822	3.89	3,390	278
1902	77,868	35,117	24,429	(4)	15,268	152,682	156,927	4.64	3,237	448
1903	(78,000)	(40,000)	(25,000)	(4)	(11,381)	154,381	159,219	5.25	1,521	202
1904	(90,000)	(45,000)	(30,000)	(4)	(15,911)	180,911	186,702	4.97	10,147	341
1905	100,000	52,000	34,000	(4)	13,254	199,254	203,849	5.79	5,535	428
1906	124,000	57,000	36,000	(4)	8,500	225,500	224,770	6.10	4,671	1,021
1907	149,000	40,000	30,000	(4)	6,600	225,600	256,910	5.90	572	1,709
1908	119,000	33,000	27,000	(4)	12,500	191,500	217,583	4.62	2,648	776
1909	164,000	48,000	33,000	(4)	16,600	261,600	265,033	5.39	2,572	9,419
1910	162,000	54,000	29,700	(4)	24,300	270,000	281,968	5.42	4,037	989
1911	(165,000)	(60,000)	(45,000)	(4)	(24,102)	294,102	300,569	5.70	7,330	323
1912	(195,000)	(90,000)	(45,000)	(4)	(36,405)	366,405	364,870	6.93	6,682	10,719
1913	(175,000)	(82,000)	(35,000)	(4)	(29,361)	321,361	372,667	5.61	8,403	5,165
1914	(170,000)	(90,000)	(30,000)	(4)	(29,670)	319,670	373,594	5.11	70,382	195
1915	(190,000)	(140,000)	(40,000)	(4)	(24,258)	394,258	519,283	14.16	131,378	63
1916	200,000	175,000	47,500	(4)	27,800	450,300	697,119	13.57	193,853	21
1917	190,000	170,000	57,000	(4)	28,000	445,000	686,408	8.93	201,962	18
1918	(185,000)	(165,000)	(56,000)	(4)	(27,710)	433,710	527,845	8.04	86,438	11
1919	163,000	155,000	55,000	(4)	29,000	402,000	485,491	7.04	122,002	32
1920	192,000	144,000	53,200	(4)	35,000	424,200	484,748	7.77	102,178	5/
1921	138,100	75,000	30,400	(4)	19,000	262,500	218,073	4.67	3,009	6,598
1922	205,400	145,000	53,500	(4)	36,000	439,900	387,265	5.74	30,286	40
1923	235,200	175,000	55,800	(4)	49,000	515,000	549,868	6.66	49,211	1
1924	240,000	155,000	61,000	(4)	56,000	512,000	552,825	6.35	72,583	11
1925	283,000	165,000	71,100	(4)	60,000	579,100	612,127	7.66	76,351	5/
1926	290,000	180,000	86,300	13,500	52,500	622,300	659,221	7.37	42,920	5/
1927	280,000	160,000	74,100	18,000	51,000	583,100	635,300	6.25	45,695	39
1928	291,000	174,000	73,500	30,000	58,000	626,500	651,247	6.03	25,289	5/
1929	290,000	185,000	68,300	36,000	55,000	634,300	672,795	6.49	14,411	226
1930	217,000	120,000	51,400	21,500	41,000	450,900	532,894	4.56	4,633	281
1931	168,000	98,000	49,300	20,000	34,700	370,000	313,621	3.64	643	274
1932	109,000	66,000	40,000	17,000	27,000	259,000	221,866	2.38	6,471	310
1933	148,000	94,000	41,300	26,000	41,000	350,300	337,269	4.03	1,145	1,890
1934	152,000	98,000	40,900	32,000	37,000	359,900	383,281	4.16	5,105	1,725
1935	195,000	124,000	56,500	55,500	42,000	473,000	449,284	4.33	1,617	4,444
1936	242,000	165,000	55,000	72,000	48,000	582,000	534,341	4.90	37	11,660
1937	256,000	169,000	58,000	88,000	39,000	610,000	608,458	6.52	249	37,208
1938	198,000	102,000	46,000	48,000	27,000	421,000	477,954	4.61	6/	7,230
1939	275,000	175,000	62,000	84,000	30,000	626,000	557,664	5.12	4,515	30,898
1940	331,205	162,614	60,195	146,721	32,322	733,057	724,192	6.34	79,091	16,468
1941	350,854	228,038	71,795	151,875	24,873	827,435	881,523	7.48	89,309	34,554
1942	247,491	319,946	66,045	80,145	14,542	728,169	945,067	7/ 8.25	133,938	36,352
1943	253,201	419,079	48,529	76,325	19,643	816,777	990,524	7/ 8.25	97,439	56,155
1944	311,933	380,688	76,450	84,462	28,111	8/ 881,644	918,339	7/ 8.25	21,576	63,626
1945	333,843	258,169	97,585	130,800	26,803	8/ 847,200	813,803	7/ 8.25	7,782	97,116

1/ Figures for total consumption represent primary and secondary redistilled metal exclusive of remelt spelter, calculated as being available for consumption. Figures for 1900-04, 1911-15, and 1918 calculated from data contained in Mineral Resources of the United States; for 1905-10, 1916-17, and 1919-39 estimated industrial use published in the Yearbook of the American Bureau of Metal Statistics; for 1940-45 as determined by direct consumer canvass. Figures for consumption by industrial groups, 1900-01, 1903-04, 1911-15, and 1918 are estimates made by the author to follow the general trends indicated by total consumption. Figures for 1902 are calculated from the total consumed on the basis of percentage breakdown of uses published in Engineering and Mining Journal, March 16, 1905; figures for 1905-10, 1916-17, 1919-39 from the Yearbook of the American Bureau of Metal Statistics; and for 1940-45 determined by direct consumer canvass.

Figures for total slab zinc production represent primary and undistilled secondary zinc exclusive of remelt spelter and are from various volumes of Mineral Resources of the United States and Minerals Yearbook.

Figures for prices represent average annual value per pound of Prime Western grade at E. St. Louis from Metal Statistics, 1946, published by American Metal Market.

2/ Figures for imports and exports from Mineral Resources of the United States and Minerals Yearbook as compiled from records of the U. S. Department of Commerce.

3/ Figures for exports of slab zinc for 1900-15 include plates and sheets; the quantities are small but not determinable.

4/ Figures for imports of slab zinc represent imports for consumption (i.e. material imported for immediate consumption plus material entering country under bond) except for 1940-45, which represent general imports.

5/ Zinc consumed for zinc-base alloy, if any, included with other uses; separate data not available.

6/ Less than 1 ton.

7/ Exports of slab zinc included with sheets and strips, a category not shown in table.

8/ Price for 1942-45 is ceiling established by Office of Price Administration.

Slab zinc consumed excludes 6,982 tons of remelt zinc in 1944 and 5,111 tons in 1945.

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TABLE 2.— Consumption of slab zinc in the United States, by grades and industry groups 1940-45, in short tons

31964

	Domestic						Foreign (all grades)	Total
	Special High Grade	Regular High Grade	Intermediate	Brass Special	Selected	Prime Western		
Galvanizing:								
1940	10,275	5,625	14,839	3,065	.....	293,431	3,970	331,205
1941	16,375	8,406	20,147	1,746	177	296,992	7,011	350,854
1942	7,272	9,189	11,599	4,452	831	204,622	9,526	247,491
1943	7,423	6,427	9,764	9,584	787	214,451	4,765	253,201
1944	10,242	7,987	9,889	7,531	792	270,844	4,648	311,933
1945	10,909	8,049	10,505	8,759	1,387	285,616	8,618	333,843
Brass products:								
1940	31,583	55,465	31,842	15,882	2,452	14,120	11,270	162,614
1941	42,829	85,974	34,822	13,678	5,094	19,801	25,840	228,038
1942	103,003	134,465	30,152	10,523	5,334	21,312	15,157	319,946
1943	147,003	182,802	34,940	24,337	8,055	21,491	451	419,079
1944	139,368	156,355	25,449	21,754	10,742	24,025	2,995	380,688
1945	65,402	114,146	17,952	21,906	6,013	26,497	6,253	258,169
Zinc-base alloy:								
1940	137,934	5,484	84	90	26	1,445	1,658	146,721
1941	146,688	3,324	618	2	1	293	949	151,875
1942	78,227	1,913	5	.....	.....	.....	.....	80,145
1943	73,542	2,445	105	.....	.....	33	200	76,325
1944	83,131	1,072	67	8	.....	184	.....	84,462
1945	125,691	1,909	21	501	.....	.....	2,678	130,800
Rolled zinc:								
1940	8,088	2,367	19,036	22,614	2,868	4,934	288	60,195
1941	1,550	22,597	12,897	20,676	8,325	2,607	3,143	71,795
1942	2,197	19,708	11,108	27,477	35	3,173	2,347	66,045
1943	3,102	14,838	3,900	18,854	.....	6,683	1,152	48,529
1944	3,056	28,281	9,153	25,932	.....	9,463	565	76,450
1945	3,321	41,816	20,053	25,929	790	2,186	3,490	97,585
Zinc oxide:								
1940	949	23,859	116	.....	.....	420	.....	25,344
1941	1,169	14,359	.....	.....	.....	.....	600	16,128
1942	1,579	6,117	.....	.....	.....	281	.....	7,977
1943	1,939	8,947	.....	.....	.....	610	.....	11,496
1944	4,977	14,180	.....	44	.....	.....	.....	19,201
1945	2,667	15,001	.....	88	.....	.....	.....	17,756
Other uses:								
1940	3,595	1,298	696	51	301	1,033	4	6,978
1941	3,317	2,031	766	51	6	1,705	869	8,745
1942	1,405	1,897	889	138	51	1,777	408	6,565
1943	1,193	2,055	969	400	.....	3,253	277	8,147
1944	1,561	2,450	1,460	313	2	2,930	194	8,910
1945	1,963	2,767	1,257	600	.....	2,448	12	9,047
Total: All uses								
1940	192,424	94,098	66,613	41,702	5,647	315,383	17,190	733,057
1941	211,928	136,691	69,250	36,153	13,603	321,398	38,412	827,435
1942	193,683	173,289	53,753	42,590	6,251	231,165	27,438	728,169
1943	234,202	217,514	49,678	53,175	8,842	246,521	6,845	816,777
1944	242,335	210,325	46,018	55,582	11,536	307,446	8,402	881,644
1945	209,953	183,688	49,788	57,783	8,190	316,747	21,051	847,200

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TABLE 3.—Consumption of slab zinc in the United States, by industries, 1940–45, in short tons 1/

31964

Industry and product	1940	1941	1942	1943	1944	1945
Galvanizing: 2/						
Sheet and strip	(3)	129,028	76,106	72,233	119,381	135,383
Tubes and pipe		69,749	47,085	51,023	50,472	63,163
Wire and wire rope		41,408	35,216	37,391	44,350	46,083
Wire cloth		11,307	7,320	(4)	(4)	(4)
Fittings		(4)	(4)	14,549	14,113	10,014
Other 5/		99,362	81,764	78,005	87,675	82,538
	331,205	350,854	247,491	253,201	6/ 315,991	6/ 337,181
Brass products:						
Sheet, strip and plate	(3)	195,714	292,820	287,962	246,402	146,375
Rod and wire				66,538	70,970	67,299
Tube				24,456	27,725	21,507
Castings and billets				16,851	16,703	12,942
Copper-base ingots		32,324	27,126	20,384	17,174	9,893
Other copper-base products				2,888	2,953	1,361
	162,614	228,038	319,946	419,079	7/ 381,927	7/ 259,377
Zinc-base alloy:						
Die casting	(3)	151,875	58,918	60,115	76,201	121,966
Alloy dies and rod			21,227	16,067	8,245	8,286
Slush and sand castings		(8)	(8)	143	75	584
	146,721	151,875	80,145	76,325	9/ 84,521	9/ 130,836
Rolled zinc	60,195	71,795	66,045	48,529	10/ 76,524	10/ 97,589
Zinc oxide	25,344	16,128	7,977	11,496	11/ 20,198	11/ 18,113
Other uses:						
Slush castings	(3)	751	552	(12)	(12)	(12)
Wet batteries		1,767	1,667	1,807	2,174	1,790
Desilvering lead		1,431	1,251	2,178	2,051	2,095
Light-metal alloys		(4)	(4)	1,074	2,047	1,469
Other 13/		4,796	3,095	3,088	3,193	3,861
	6,978	8,745	6,565	8,147	14/ 9,465	14/ 9,215
Total: All uses	733,057	827,435	728,169	816,777	15/ 888,626	15/852,311

1/ Based on a canvass of 600 plants in 1940, 1941, and 1942 and a somewhat larger coverage in 1943, 1944 and 1945 mostly from small consumers.
2/ Includes zinc used in galvanizing, but excludes sherardizing.
3/ Data on products according to industry not obtained for 1940.
4/ Separate figures not available but included in "Other".
5/ Includes miscellaneous articles not given elsewhere.
6/ Includes 4,058 tons of remelt zinc in 1944 and 3,338 tons in 1945.
7/ Includes 1,239 tons of remelt zinc in 1944 and 1,208 tons in 1945.
8/ Included under "other uses" in 1941 and 1942.
9/ Includes 59 tons of remelt zinc in 1944 and 36 tons in 1945.
10/ Includes 74 tons of remelt zinc in 1944 and 4 tons in 1945.
11/ Includes 997 tons of remelt zinc in 1944 and 357 tons in 1945.
12/ Included under "Zinc-base alloy" in 1943, 1944, and 1945.
13/ Includes zinc used in making zinc dust, bronze powder alloys, chemicals, castings, and miscellaneous uses not elsewhere mentioned.
14/ Includes 555 tons of remelt zinc in 1944 and 168 tons in 1945.
15/ Includes 6,982 tons of remelt zinc in 1944 and 5,111 tons in 1945.

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TABLE 4.— Consumption of slab zinc in the United States, by geographic divisions and States, 1940-45, in short tons

31964

Geographic division and State	1940		1941		1942		1943		1944		1945		Average annual consumption 1940-1945	Rank
	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank		
I. New England:														
Connecticut	82,929	4	108,005	4	142,206	1	154,670	1	131,481	2	105,570	4	120,810	2
Massachusetts	9,420	14	14,530	14	15,130	12	16,251	12	16,395	13	14,416	15	14,357	14
Maine	221	27	1,014	23	1,367	21	1,215	22	1,384	22	825	26	988	23
New Hampshire	...	..	...	..	(1)	29	(1)	27	(1)	29	190	31	246	30
Rhode Island	(2)	28	(2)	27	(1)	32	(1)	35	(1)	34	91	35	193	32
Total	3/ 92,570	3	3/ 123,549	3	159,155	3	172,848	3	149,762	3	121,092	3	136,594	3
II. Middle Atlantic:														
New Jersey	21,902	10	19,893	12	21,714	9	29,428	9	23,031	10	19,673	13	22,607	11
New York	49,874	6	56,789	7	48,747	7	43,721	7	45,792	7	44,410	6	48,222	7
Pennsylvania	110,433	2	119,421	2	92,532	3	105,075	3	119,780	3	119,610	2	111,142	3
Total	182,209	2	196,103	2	162,993	2	178,224	2	188,603	2	183,693	2	181,971	2
III. South Atlantic:														
Delaware	(1)	35	(1)	35	(1)	36	.....	..	.....	..	.....	..	1	41
District of Columbia	.....		.....		(1)	28	(1)	32	(1)	35	(1)	33	152	34
Florida	(1)	30	(1)	30	(1)	34	(1)	33	(1)	32	193	30	186	33
Georgia	1,207	20	1,023	22	782	23	686	25	1,115	23	1,642	20	1,076	22
Maryland	22,839	9	22,498	9	19,740	10	26,813	10	32,645	9	24,447	10	24,830	9
North Carolina	(1)	34	(1)	36	.....		.....		.....		.....		1	41
South Carolina	(1)	31	(1)	32	(1)	33	(1)	34	(1)	31	(1)	36	152	34
Virginia	459	25	778	25	438	25	683	26	932	25	910	25	700	25
West Virginia	20,140	11	19,775	13	13,748	13	13,851	13	22,544	12	25,939	8	19,333	12
Total	44,866	4	44,348	4	35,312	4	42,804	4	57,928	4	53,327	4	46,431	4
IV. East North Central:														
Illinois	110,987	1	130,849	1	108,753	2	105,724	2	140,758	1	144,989	1	123,677	1
Indiana	60,866	5	60,077	5	57,446	5	55,616	5	73,330	5	72,905	5	63,373	5
Michigan	48,799	7	59,863	6	51,110	6	43,367	8	46,596	6	42,216	7	48,659	6
Ohio	107,862	3	113,082	3	73,031	4	103,945	4	113,833	4	119,051	3	105,134	4
Wisconsin	12,819	13	21,408	10	17,479	11	49,644	6	37,734	8	24,910	9	27,333	8
Total	341,333	1	385,279	1	307,819	1	358,296	1	412,251	1	404,071	1	368,176	1
V. East South Central:														
Alabama	24,055	8	20,792	11	10,460	14	12,915	14	15,736	14	21,284	12	17,540	13
Kentucky	7,789	16	7,586	16	4,698	17	3,942	17	6,467	16	7,469	16	6,325	16
Mississippi	(1)	32	(1)	37	.....		.....		.....		.....		6	39
Tennessee	(1)	23	(1)	24	(2)	26	(2)	30	776	26	1,272	22	706	24
Total	32,462	5	29,226	5	3/ 15,158	6	3/ 16,857	6	22,979	6	30,025	5	24,577	6
VI. West North Central:														
Iowa	5,638	17	5,406	17	5,492	16	5,074	16	5,506	17	7,336	17	5,742	17
Kansas	.....		.....		.....		(2)	37	(2)	38	18	38	18	37
Minnesota	1,492	18	1,922	18	1,797	20	2,200	19	2,210	19	2,668	18	2,048	19
Missouri	8,231	15	8,840	15	6,267	15	7,022	15	11,108	15	14,763	14	9,372	15
Nebraska	(2)	29	149	31	115	35	949	23	1,034	24	1,031	24	4/ 546	26
Total	3/15,361	7	16,317	7	13,671	7	3/ 15,245	7	3/ 19,858	7	25,816	6	17,755	7
VII. West South Central:														
Louisiana	.....	..	(1)	33	(1)	31	(2)	31	(2)	30	(2)	29	212	31
Oklahoma	(2)	26	(1)	29	(1)	30	393	29	687	28	807	27	466	28
Texas	1,001	22	1,398	21	2,476	19	3,174	18	2,301	18	2,496	19	2,141	18
Total	3/ 1,001	9	1,755	9	2,879	8	3/ 3,567	8	3/ 2,988	8	3/ 3,303	8	2,819	8
VIII. Mountain:														
Arizona	.....	..	.....	..	.....	..	.....	..	(1)	37	(1)	37	16	38
Colorado	(1)	19	(1)	20	(1)	22	(1)	21	(1)	21	1,488	21	1,352	21
Idaho	(1)	24	(1)	26	(1)	24	(1)	28	(1)	33	(1)	32	375	29
Nevada	.....	..	.....	..	.....	..	(1)	36	(1)	36	.....	..	45	35
New Mexico	(1)	33	.....	..	.....	..	.....	..	.....	..	.....	..	5/	40
Utah	(1)	34	(1)	34	.....		(1)	38	(1)	39	(1)	34	23	36
Total	2,024	3	2,042	8	1,384	9	1,877	9	1,736	9	1,827	9	1,814	9
IX. Pacific:														
California	19,447	12	26,237	8	26,276	8	24,035	11	22,727	11	21,780	11	23,417	10
Oregon	.....	..	336	28	399	27	720	24	724	27	688	28	478	27
Washington	1,038	21	1,869	19	2,721	18	1,569	20	1,647	20	1,248	23	1,682	20
Total	20,485	6	28,442	6	29,396	5	26,324	5	25,098	5	23,716	7	25,577	5
Total: All States	733,057	..	827,435	..	728,169	..	816,777	..	4/ 881,644	..	4/ 847,200	..	805,714	..

1/ Nominal quantity consumed; included with subtotal for division, as less than 3 companies reported.
2/ Nominal quantity consumed; included with total: All States as less than 3 companies reported.
3/ Excludes total for State for which data are indicated by footnote (2) as being included with total: All States.
4/ 5 year average, 1941-45.
5/ Average included in total.
6/ Excludes 6,892 tons of remelt zinc in 1944 and 5,111 tons in 1945.

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TABLE 5.— Consumption of slab zinc for galvanizing in the United States, by States, 1940-45, in short tons

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State	Geographic division	1940		1941		1942		1943		1944		1945	
		Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank
Alabama	V	24,055	5	20,792	5	10,333	8	12,675	6	15,672	7	21,211	6
California	IX	12,921	8	15,117	8	11,974	7	12,028	7	13,027	8	11,293	8
Colorado	VIII	(1)	18	(1)	18	(1)	21	(1)	18	(1)	19	(1)	19
Connecticut	I	1,620	16	3,055	13	3,664	14	3,824	14	4,015	14	3,528	15
Florida	III	(1)	27	(1)	28	(1)	30	(1)	28	(1)	31	(1)	29
Georgia	III	1,207	19	1,023	21	782	22	(1)	23	1,112	22	1,638	18
Illinois	IV	32,937	3	34,573	3	23,471	3	25,353	3	28,432	3	33,749	3
Indiana	IV	29,177	4	27,174	4	17,168	4	11,484	8	23,234	4	25,978	4
Iowa	VI	(1)	27	215	27	159	28	(1)	29	232	30	198	28
Kentucky	V	(1)	10	(1)	10	(1)	13	(1)	13	(1)	11	(1)	10
Louisiana	VII	.....	..	(1)	31	(1)	27	(1)	27	(1)	27	(1)	27
Maine	I	(1)	28	636	23	1,031	20	1,150	20	(1)	20	822	23
Maryland	III	20,800	6	19,680	6	14,114	5	14,802	4	17,891	6	17,315	7
Massachusetts	I	4,218	12	6,137	12	6,166	10	7,434	10	7,587	9	7,499	9
Michigan	IV	2,741	14	2,475	16	4,772	12	4,198	12	5,265	13	4,936	13
Minnesota	VI	1,492	17	1,920	17	1,795	17	2,200	16	2,194	17	2,667	17
Missouri	VI	2,603	15	2,913	14	2,416	15	2,829	15	3,876	15	3,784	14
Nebraska	VI	(1)	26	(1)	29	(1)	31	(1)	32	(1)	32	189	30
New Hampshire	I	.....	..	.....	..	.....	..	.....	..	(1)	29	(1)	32
New Jersey	II	6,189	11	6,946	11	8,652	9	8,935	9	7,498	10	5,607	11
New York	II	9,061	9	11,096	9	5,923	11	5,005	11	5,310	12	5,342	12
Ohio	IV	74,069	2	77,414	2	49,778	2	49,902	2	69,937	1	77,926	1
Oklahoma	VII	(1)	24	(1)	25	(1)	26	378	25	687	25	744	24
Oregon	IX	.....	..	(1)	25	368	25	704	22	710	24	677	25
Pennsylvania	II	74,483	1	85,095	1	61,240	1	64,091	1	68,094	2	69,666	2
Rhode Island	I	(1)	25	(1)	26	(1)	29	(1)	31	(1)	33	(1)	33
South Carolina	III	.....	..	(1)	30	(1)	32	(1)	30	(1)	28	(1)	34
Tennessee	V	(1)	22	(1)	22	(1)	24	(1)	26	(1)	26	(1)	22
Texas	VII	1,001	20	1,365	19	1,314	18	1,127	21	1,124	21	1,196	20
Utah	VIII	.....	..	.....	..	.....	..	.....	..	.....	..	(1)	31
Virginia	III	459	23	561	24	(1)	23	(1)	24	820	23	603	26
Washington	IX	870	21	1,031	20	1,171	19	1,215	19	1,395	18	1,026	21
West Virginia	III	17,472	7	17,695	7	12,118	6	13,837	5	20,283	5	22,713	5
Wisconsin	IV	3,088	13	2,826	15	1,871	16	1,898	17	2,659	16	2,861	16
Total		331,205	..	350,854	..	247,491	..	253,201	..	2/ 311,933	..	2/ 333,843	..

1/ Nominal quantity consumed; included with total, as less than 3 companies reported.
2/ Excludes 4,058 tons of remelt zinc in 1944 and 3,338 tons in 1945.

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TABLE 6. — Consumption of slab zinc in the United States for brass products, by States, 1940-45, in short tons

31964

State	Geographic division	1940		1941		1942		1943		1944		1945	
		Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank
Alabama	V	.....	..	....	..	(1)	18	(1)	17	(1)	17	73	18
California	IX	171	12	461	13	1,995	12	3,489	12	3,407	12	1,692	12
Colorado	VIII	.....	..	....	..	(1)	21	(1)	21	(1)	22	(1)	21
Connecticut	I	77,259	1	97,947	1	133,980	1	146,695	1	123,694	1	97,430	1
Delaware	III	(1)	18	(1)	21	(1)	25	.....	..	.....	..	.....	..
District of Columbia	III	.....	..	.....	..	(1)	15	(1)	16	(1)	16	(1)	15
Florida	III	.....	..	.....	..	.....	..	.....	..	(1)	28	(1)	26
Georgia	III	.....	..	.....	..	.....	..	(1)	25	(1)	27	(1)	24
Illinois	IV	13,529	4	19,562	4	29,513	4	35,607	4	52,832	2	30,670	2
Indiana	IV	(1)	14	(1)	12	18,719	5	28,542	6	22,583	7	7,350	9
Iowa	VI	.....	..	.....	..	(1)	27	.....	..	(1)	28	(1)	26
Kansas	VI	.....	..	.....	..	.....	..	(1)	20	(1)	19	(1)	22
Kentucky	V	(1)	17	(1)	20	(1)	26	(1)	26	(1)	21	86	17
Maine	I	(1)	11	(1)	14	(1)	14	.....	..	(1)	24	(1)	25
Maryland	III	(1)	10	2,782	10	5,626	11	12,011	10	14,754	9	6,841	10
Massachusetts	I	3,555	9	6,372	8	7,685	10	7,977	11	7,484	11	5,241	11
Michigan	IV	17,288	2	32,984	2	41,663	2	35,194	5	34,373	3	25,697	3
Minnesota	VI	.....	..	.....	..	.....	..	.....	..	(1)	23	.....	..
Missouri	VI	(1)	16	(1)	15	(1)	16	491	14	341	13	464	13
Nebraska	VI	.....	..	(1)	19	(1)	23	(1)	24	(1)	25	(1)	24
New Hampshire	I	.....	..	.....	..	(1)	17	(1)	13	(1)	15	(1)	19
New Jersey	II	7,341	8	4,654	9	7,958	9	15,431	9	10,641	10	8,719	8
New York	II	17,137	3	24,167	3	30,456	3	27,277	7	27,295	6	19,267	6
Ohio	IV	8,044	5	11,235	6	13,066	7	42,037	3	30,304	5	21,164	4
Oregon	IX	.....	..	(1)	17	(1)	22	(1)	22	(1)	23	(1)	23
Pennsylvania	II	7,925	6	8,965	7	11,849	8	16,202	8	18,499	8	12,747	7
Rhode Island	I	.....	..	(1)	18	(1)	24	(1)	23	.....	..	(1)	20
South Carolina	III	(1)	15	(1)	16	(1)	19	(1)	19	(1)	18	(1)	22
Texas	VII	.....	..	(1)	22	(1)	25	(1)	21	(1)	24	.....	..
Utah	VIII	.....	..	.....	..	.....	..	.....	..	(1)	26	(1)	26
Virginia	III	.....	..	(1)	15	(1)	20	121	18	42	20	87	16
Washington	IX	(1)	13	838	11	1,550	13	354	15	252	14	180	14
Wisconsin	IV	7,709	7	16,591	5	14,293	6	46,519	2	33,535	4	20,174	5
Total		162,614	..	228,038	..	319,946	..	419,079	..	2/ 380,688	..	2/ 258,169	..

1/ Nominal quantity consumed; included with total as less than 3 companies reported.
2/ Excludes 1,239 tons of remelt zinc in 1944 and 1,208 tons in 1945.

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TABLE 7. — Consumption of slab zinc in the United States, for zinc-base alloys, by States, 1940-45, in short tons

31964

State	Geographic division	1940		1941		1942		1943		1944		1945	
		Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank
California	IX	6,340	6	9,418	5	11,765	2	7,969	4	5,630	7	8,218	8
Connecticut	I	2,189	10	4,026	10	2,313	10	1,577	11	1,845	10	2,513	10
Florida	III	.....	..	.....	..	.....	..	.....	..	(1)	14	.....	..
Illinois	IV	38,619	1	43,394	1	25,000	1	20,871	1	21,010	1	35,916	1
Indiana	IV	9,671	5	8,444	7	3,733	7	4,178	6	5,218	8	9,214	7
Kentucky	V	(1)	12	(1)	12	.....	..	.....	..	.....	..	.....	..
Maine	I	.....	..	.....	..	.....	..	(1)	13	.....	..	.....	..
Maryland	III	.....	..	.....	..	.....	..	.....	...	.....	..	(1)	13
Massachusetts	I	.....	..	.....	..	(1)	13	(1)	14	(1)	13	(1)	15
Michigan	IV	28,206	2	24,366	2	4,186	6	3,403	7	6,221	6	11,253	5
Missouri	VI	4,996	8	5,202	9	3,384	8	3,224	8	6,710	5	10,377	6
New Jersey	II	6,036	7	6,249	8	3,098	9	2,817	9	2,673	9	3,430	9
New York	II	19,247	4	16,004	4	8,538	4	9,881	3	10,676	3	16,293	3
Ohio	IV	25,189	3	23,972	3	9,866	3	11,275	2	12,538	2	18,794	2
Oklahoma	VII	.....	..	.....	..	.....	..	(1)	15	.....	..	(1)	14
Pennsylvania	II	4,095	9	8,684	6	5,764	5	7,861	5	9,605	4	11,307	4
Rhode Island	..	.....	..	(1)	13	.....	..	.....	..	.....	..	.....	..
Tennessee	V	(1)	13	.....	..	.....	..	.....	...	.....	..	.....	..
Texas	VII	.....	..	.....	..	(1)	12	(1)	10	(1)	12	(1)	12
Washington	IX	.....	..	.....	..	.....	..	.....	..	.....	..	(1)	16
Wisconsin	IV	2,020	11	1,890	11	1,287	11	(1)	12	(1)	11	(1)	11
Total		146,721	..	151,875	..	80,145	..	76,325	..	2/ 84,462	..	2/ 130,800	..

1/ Nominal quantity consumed in most cases; included with total, as less than 3 companies reported.
2/ Excludes 59 tons of rement zinc in 1944 and 36 tons in 1945.

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TABLE 8.— Consumption of slab zinc in the United States, for rolled zinc, by States, 1940-45, in short tons 1/

31964

State	Geographic division	1940		1941		1942		1943		1944		1945	
		Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank
Connecticut	I	(2)	8	(2)	8	(2)	6	(2)	5	(2)	7	(2)	7
Illinois	IV	23,351	1	31,378	1	30,093	1	23,149	1	35,562	1	44,458	1
Indiana	IV	3/ 23,097	2	3/ 25,061	2	3/ 22,971	2	3/ 14,768	2	3/ 28,190	2	38,374	2
Iowa	VI	(4)	4	(4)	4	(4)	4	(4)	4	(4)	4	(4)	4
Massachusetts	I	(2)	7	(2)	7	(2)	8	(2)	7	(2)	8	(2)	8
New York	II	5/ 13,747	5	5/ 15,356	5	5/ 12,981	5	5/ 10,612	6	5/ 12,698	6	5/ 14,753	6
Pennsylvania	II	(2)	3	(2)	3	(2)	3	(2)	3	(2)	3	(2)	3
West Virginia	III	(4)	6	(4)	6	(4)	7	.....	..	(4)	5	(4)	5
Total		60,195	..	71,795	..	66,045	..	48,529	..	6/ 76,450	..	6/ 97,585	..

1/ To prevent disclosure of individual company operation in every State except Illinois, data are combined by areas as indicated; the rank given for each State is according to actual consumption.
2/ Data included with total for New York.
3/ Figure for Indiana includes total for Iowa and West Virginia.
4/ Data included with total for Indiana.
5/ Figure for New York includes total for Connecticut, Massachusetts, and Pennsylvania.
6/ Excludes 74 tons of remelt zinc in 1944 and 4 tons in 1945.

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TABLE 9.— Consumption of slab zinc in the United States, for zinc oxide, by States, 1940-45, in short tons

31964

State	Geographic division	1940		1941		1942		1943		1944		1945	
		Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank
Illinois	IV	(1)	3	(1)	3	(1)	3	(1)	3	(1)	2	(1)	3
Indiana	IV	(1)	2	(1)	2	(1)	2	(1)	2	(1)	3	(1)	2
New Jersey	II	.....	..	(1)	4	.....	..	.....	..	.....	.	.....	.
Pennsylvania	II	(1)	1	(1)	1	(1)	1	(1)	1	(1)	1	(1)	1
Total		25,344	..	16,128	..	7,977	..	11,496	..	2/ 19,201	..	2/ 17,756	..

1/ To prevent disclosure of a single company's operation in each of the States listed, data are given only as totals; the rank given for each State is according to actual consumption.

2/ Excludes 997 tons of remelt zinc in 1944 and 357 tons in 1945.

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TABLE 10.--Consumption of slab zinc in the United States, for other uses, by States, 1940-45, in short tons 1/.

31964

State	1940		1941		1942		1943		1944		1945	
	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank	Quantity	Rank
California	15	11	1,241	3	542	4	549	6	663	6	577	5
Connecticut	1,020	2	1,424	2	435	7	473	8	211	10	247	10
Illinois	13	12	248	11	11	15	113	12	122	15	(2)	14
Indiana	10	13	420	10	344	8	343	10	314	9	365	6
Massachusetts	6	14	37	14	114	11	61	15	42	18	11	21
Michigan	564	6	38	13	489	5	572	5	737	5	330	8
Missouri	(2)	4	509	7	(2)	10	478	7	(2)	12	(2)	13
New Jersey	2,336	1	2,035	1	2,006	1	2,245	1	2,219	1	1,917	2
New York	(2)	9	626	6	971	2	83	13	345	8	337	7
Ohio	560	5	461	9	321	9	731	4	1,054	2	1,167	3
Pennsylvania	711	3	975	4	645	3	965	2	904	3	2,116	1
Virginia	.....	..	(2)	22	(2)	17	(2)	17	(2)	17	220	11
Wisconsin	(2)	17	101	12	(2)	12	(2)	16	(2)	25	.....	..
Other States	3/ 946	..	4/ 629	..	5/ 497	..	6/ 1,433	..	7/ 2,047	..	8/ 1,541	..
Total	6,978	..	8,745	..	6,565	..	8,147	..	9/ 8,910	..	9/ 9,047	..

1/ Includes slush castings, wet batteries, desilverizing lead, light metal alloys, zinc dust, bronze powder, miscellaneous other alloys, chemicals, and miscellaneous uses not elsewhere mentioned.
2/ Quantity consumed included with total, as less than 3 companies reported.
3/ Includes the following States in 1940 (rank in parentheses): Colorado (10), Idaho (7), Maryland (18), Mississippi (10), Tennessee (15), New Mexico (16), North Carolina (17), Utah (17), and West Virginia (8).
4/ Includes the following States in 1941 (rank in parentheses): Colorado (16), Florida (20), Idaho (8), Maryland (15), Minnesota (21), Mississippi (22) North Carolina (21), Rhode Island (21), South Carolina (22), Tennessee (19), Texas (17), Utah (18), and Virginia (22).
5/ Includes the following States in 1942 (rank in parentheses): Colorado (13), Idaho (6), Minnesota (16), and Tennessee (14).
6/ Includes the following States in 1943 (rank in parentheses): Colorado (18), Idaho (9), Kansas (22), Louisiana (20), Nebraska (3), Nevada (11), Rhode Island (22), Tennessee (9), Texas (14), Utah (21), and West Virginia (20).
7/ Includes the following States in 1944 (rank in parentheses): Arizona (16),Colorado (22), Idaho (13), Kansas (24), Kentucky (20), Louisiana (21), Maine (15), Minnesota (24), Nebraska (4), Nevada (14), Tennessee (11), Texas (7), Utah (23), and West Virginia (19).
8/ Includes the following States in 1945 (rank in parentheses): Arizona (20), Colorado (23), Idaho (12), Kansas (23), Louisiana (22), Minnesota (24), New Hampshire (16), Nebraska (4), Tennessee (9), Texas (15), Washington (18), and West Virginia (17).
9/ Includes 555 tons of remelt zinc in 1944 and 168 tons in 1945.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON

FOR NATIONAL DEFENSE - PLEASE RUSH

CONSUMPTION OF ZINC IN 1940

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Please reply to the following questions and return the schedule promptly to the Bureau of Mines in the enclosed envelope which requires no postage. IF YOU DO NOT HAVE EXACT DATA REQUESTED, PLEASE ENTER BEST ESTIMATES POSSIBLE AND MARK "ESTIMATED". Kindly submit a separate report for each plant. Additional schedules mailed on request.

1. Location of Plant: State..... City or Town.....
2. Consumption and stocks of domestic and foreign slab zinc in 1940 (exclusive of zinc alloys and zinc scrap, see section 3):

	Special High-grade 99.99% Zn	Regular High-grade 99.90% Zn	Inter-mediate 99.50% Zn	Brass Special 99.00% Zn	Selected 98.75% Zn	Prime Western	Total
	Short tons	Short tons	Short tons	Short tons	Short tons	Short tons	Short tons
a. Stocks on Dec. 31, 1939: 1/							
Domestic							
Foreign 2/							
Total							
b. Received during 1940:							
Domestic							
Foreign 2/							
Total							
c. Stocks on Dec. 31, 1940: 1/							
Domestic							
Foreign 2/							
Total							
d. Consumed in 1940:							
Domestic							
Foreign 2/							
Total							
e. Reshipped to other plants in 1940:							
Domestic							
Foreign 2/							
Total							

1/ Exclude producers' stocks as reported to the American Zinc Institute. Report slab zinc stocks only. Do not include zinc in process in melting pots, furnaces, etc.

2/ Report only slab zinc imported as such. Do not include slab zinc produced from imported ore, etc.

Note: The above table should balance, i.e., "a" plus "b" less "c" should equal "d" plus "e".

31964

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3. Other zinc-containing materials used in 1940:

A. Scrap zinc (Purchased new or old scrap. **Do not include your own plant scrap**):

	Quantity used in 1940:	
	Gross weight	Zinc content
	Short tons	Short tons
Clippings		
Sheet		
Skimmings		
Dross		
Die castings		
Other (please specify)		

B. Zinc alloys: 3/

	Quantity used in 1940:	
	Gross weight	Zinc content
	Short tons	Short tons
Zinc-base die casting alloy		
Brass and bronze ingots		
Other (please specify)		

3/ Please give name of firm or firms that supplied your zinc alloys:

4. Zinc-containing products made at plant during 1940:

	Quantity produced (approximate)		Stocks of finished products: (approximate)	
			Dec. 31, 1939	Dec. 31, 1940
	Gross weight 4/	Zinc content	Gross weight	Gross weight
	Short tons	Short tons	Short tons	Short tons
Galvanized pipe				
Galvanized sheet				
Galvanized wire				
Other galvanizing				
Brass sheets, tubes, etc.				
Brass ingots				
Zinc-base die casting alloy				
Rolled and ribbon zinc				
Zinc oxide				
Other (please specify)				
Total	xxxxxxxxxxxxxxx		xxxxxxxxxxxxxxx	xxxxxxxxxxxxxxx

4/ Report only weight of finished products. Do not include weight of scrap made and recirculated in your own plant.

Signature

Official Position

31964

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WPB-579

UNITED STATES
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BUREAU OF MINES
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CONSUMPTION OF SLAB ZINC IN CALENDAR YEAR 1941

Please reply to the following questions and return the schedule promptly to the Bureau of Mines in the enclosed envelope which requires no postage. If you do not have exact data requested please enter best estimates possible and mark "Estimated". Kindly submit a separate report for each plant. Additional schedules mailed on request. THIS INFORMATION IS BEING COLLECTED AT THE REQUEST OF THE WAR PRODUCTION BOARD.

Location of plant: State..... City or town.....

1. CONSUMPTION AND STOCKS OF DOMESTIC SLAB ZINC EXCLUSIVE OF ALLOYS: Report slab zinc stocks only. Do not include zinc in process, or in melting pots, furnaces, etc. Exclude producers' stocks as reported to the American Zinc Institute. Under "b" enter "net" receipts only, i.e., slab zinc received less quantity reshipped to others. Note: The table should balance, i.e., "a" plus "b" should equal "c" plus "d".

	a. Stocks at plant on December 31 1940 (short tons)	b. Net receipts during 1941 (short tons)	c. Consumed during 1941 (Short tons)	d. Stocks at plant on December 31 1941 (Short tons)	Domestic slab zinc in transit to plant on December 31 1941 (Short tons)
Special high-grade (99.99% Zn)					
Regular high-grade (99.90% Zn)					
Intermediate (99.50% Zn)					
Brass special (99.00% Zn)					
Selected (98.75% Zn)					
Prime Western					
TOTAL					

2. If you received or consumed any FOREIGN (DUTY-PAID) SLAB ZINC IMPORTED AS SUCH, please give in short tons (do not include these figures in above table):
Stocks December 31, 1940..... Receipts during 1941.....
Consumed during 1941..... Stocks December 31, 1941.....
Foreign slab zinc in transit to plant at end of 1941.....

PLEASE REPLY TO THE QUESTIONS ON THE BACK OF THIS SCHEDULE (Over)

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3. CONSUMPTION OF SLAB ZINC IN 1941, BY USES. **Please list total slab zinc consumed in the uses shown below, and not merely zinc content of finished products.**

Use	Slab zinc consumed (Short tons)
Galvanizing: (specify process, i.e., hot-dip or electro-galvanizing; in the latter case signify whether slab zinc or zinc anodes were used).	
Sheets	
Tubes and pipe	
Wire	
Wire cloth	
Shapes (all articles not elsewhere mentioned, please specify)	
Brass products:	
Sheets, tubes, etc.	
Ingots	
Total brass products	
Zinc-base die casting alloy	
Rolled and ribbon zinc	
Zinc oxide	
Other uses (i.e., slush castings, zinc for wet batteries, desilverization of lead, anodes, etc. Please specify)	
Total other uses	
Total consumption (this figure should equal sum of domestic and foreign slab zinc listed as consumed in sections 1 and 2)	

(Signature) (Official position)

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WPB-579
(Revised Jan. 1943)

Budget Bureau No. 42-R 188-42
Approval expires 12-31-44

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON

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CONSUMPTION OF SLAB ZINC IN CALENDAR YEAR 1942

Do not mail this form to
the War Production Board

Please reply to the following questions and return the schedule promptly to the Bureau of Mines in the enclosed envelope which requires no postage. If you do not have exact data requested please enter best estimates possible and mark "Estimated" Kindly submit a separate report for each plant. Additional schedules mailed on request. THIS INFORMATION IS BEING COLLECTED AT THE REQUEST OF THE WAR PRODUCTION BOARD.

Location of plant: State ..... City or town .....

1. CONSUMPTION AND STOCKS OF DOMESTIC SLAB ZINC EXCLUSIVE OF SCRAP AND ALLOYS. Report slab zinc stocks only. Do not include zinc in process, or in melting pots, furnaces, etc. Exclude producers' stocks as reported to the American Zinc Institute Under "b" enter "net" receipts only, i.e., slab zinc received less quantity reshipped to others. Note: The table should balance, i.e., "a" plus "b" should equal "c" plus "d"

	a. Stocks at plant on December 31, 1941 (short tons)	b. Net receipts during 1942 (short tons)	c. Consumed during 1942 (short tons)	d. Stocks at plant on December 31, 1942 (short tons)	Domestic slab zinc in transit to plant on December 31, 1942 (short tons)
Special high-grade (99.99% Zn)					
Regular high-grade (99.90% Zn)					
Intermediate (99.50% Zn)					
Brass special (99.00% Zn)					
Selected (98.75% Zn)					
Prime Western					
TOTAL					

2. If you received or consumed any FOREIGN (DUTY-PAID) SLAB ZINC IMPORTED AS SUCH, please give the following information (do not include these figures in above table):

	Foreign Slab Zinc (short tons)
a. Stocks December 31, 1941	
b. Receipts during 1942	
c. Consumed during 1942	
d. Stocks December 31, 1942	
e. Foreign slab zinc in transit to plant at end of 1942	

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3. CONSUMPTION OF SLAB ZINC IN 1942, BY USES. Please list total slab zinc consumed in uses shown below, and not merely zinc content of finished products.

	Slab zinc consumed	
	Itemized (short tons)	Totals (short tons)
Galvanizing: (specify process, i.e., hot-dip ..... or electro-galvanizing .....; in the latter case signify whether the anodes were purchased as such ..... or made in your own plant from slab zinc .....)		
Sheets.		
Tubes and pipes		
Wire.		
Wire cloth.		
Shapes (all articles not elsewhere mentioned, please specify):		
.....		
Total galvanizing.		
Brass products:		
Sheets, tubes, etc.		
Ingots, castings, etc.		
Total brass products		
Zinc-base alloy:		
For die castings		
For zinc alloy dies		
Total zinc-base alloy.		
Rolled and ribbon zinc		
Zinc oxide		
Other uses (i.e., slush castings, zinc for wet batteries, desilverization, anodes for sale to others, zinc dust, etc., please specify).		
.....		
.....		
.....		
Total other uses		
Total consumption (this figure should equal sum of domestic and foreign slab zinc listed as consumed in sections 1 and 2)		

....

(Signature) (Official position)

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Form 6-1151-A
(Formerly WPB-579)
Revised November 1943)

Budget Bureau No. 42-R188
Approval expires December 31, 1944

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CONSUMPTION OF SLAB ZINC IN CALENDAR YEAR 1943

Please indicate any change necessary for correct name and address.

Please reply to the following questions and return the schedule promptly to the ureau of Mines in the enclosed envelope which requires no postage. If you do not have xact data requested please enter best estimates possible and mark "Estimated". Kindly ubmit a separate report for each plant. Additional schedules mailed on request. LEASE READ AND USE THE SEPARATE INSTRUCTION SHEET.

ocation of plant: State..... City or town.....

. CONSUMPTION AND STOCKS OF DOMESTIC AND FOREIGN SLAB ZINC EXCLUSIVE OF SCRAP & ALLOYS:

List all figures in tons of 2,000 pounds (a)	Stocks at plant on Dec. 31, 1942 (b)	Receipts during 1943 1/ (c)	Consumed in 1943: For copper-base alloys (d)	Consumed in 1943: For all other uses (e)	Stocks at plant on Dec. 31, 1943 (f)	In transit to plant on Dec. 31, 1943 (g)
. Special high grade (SHG)	.....	.....	.....	.....	.....	.....
. High grade.....(HG)	.....	.....	.....	.....	.....	.....
. Intermediate.....(INT)	.....	.....	.....	.....	.....	.....
. Brass special.....(BS)	.....	.....	.....	.....	.....	.....
. Select.....(SEL)	.....	.....	.....	.....	.....	.....
. Prime western.....(PW)	.....	.....	.....	.....	.....	.....
. Remelt.....(REM)	.....	.....	.....	.....	.....	.....
. Total slab zinc.....	.....	.....	.....	.....	.....	.....
. Foreign slab zinc: 2/						
A. Grade:.....	.....	.....	.....	.....	.....	.....
B. Grade:.....	.....	.....	.....	.....	.....	.....
C. Grade:.....	.....	.....	.....	.....	.....	.....
D. Total foreign zinc...	.....	.....	.....	.....	.....	.....

/ Enter actual receipts. When the table will not balance due to reshipments, please explain:.....

/ Data referring to foreign slab zinc should be included in lines 1 thru 8.

PLEASE REPLY TO THE QUESTIONS ON THE BACK OF THIS SCHEDULE

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II. CONSUMPTION OF SLAB ZINC BY USES DURING 1943.

Products or uses for which slab zinc was put in process (a)	Slab zinc consumed: Itemized (b) (short tons)	Slab zinc consumed: Totals (c) (short tons)
1. Galvanizing of: 1/		
A. Sheet and strip	.....	
B. Wire and wire rope	.....	
C. Tube and pipe	.....	
D. Fittings (for tube & pipe)	.....	
E. Other (specify):	.....	
F. Sub-total - Galvanizing		.....
2. Brass and bronze products:		
A. Sheet and strip and plate	.....	
B. Rod and wire	.....	
C. Tube	.....	
D. Castings and billets	.....	
E. Copper-base ingots	.....	
F. Other copper-base products	.....	
G. Sub-total - Brass and bronze		.....
3. Zinc-base alloy:		
A. Die castings	.....	
B. Stamping dies	.....	
C. Zinc alloy rod	.....	
D. Slush & sand castings, etc	.....	
E. Sub-total - Zinc-base alloy		.....
F. Zinc-base alloy ingots, etc		.....
4. Rolled zinc:		
A. Sheet and strip	.....	
B. All other forms	.....	
C. Sub-total - Rolled zinc		.....
5. Zinc oxide:		.....
6. Other (please specify):		
A.	.....	
B.	.....	
C.	.....	
D. Sub-total - Other		.....
7. Total - all zinc put in process		.....

1/ Indicate process and percent of total zinc consumed in galvanizing used for each: Hot dip .....%, Electrogalvanizing .....%.

..... (Signature)

..... (Official position)

31964

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Form 6-1151-A

Budget Bureau No. 42-R188.1
Approval expires August 31, 1946

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CONSUMPTION OF SLAB ZINC IN CALENDAR YEAR 1944

Please indicate any change necessary for correct name and address.

Please reply to the following questions and return the schedule promptly to the Bureau of Mines in the closed envelope which requires no postage. If you do not have exact data requested please enter best estimates possible and mark "Estimated". Kindly submit a separate report for each plant. Additional schedules mailed on request.

PLEASE READ AND USE THE SEPARATE INSTRUCTION SHEET.

cation of plant: State_____ City or town_____

CONSUMPTION AND STOCKS OF DOMESTIC AND FOREIGN SLAB ZINC EXCLUSIVE OF SCRAP AND ALLOYS:

List all figures in tons of 2,000 pounds (a)	Stocks at plant at beginning (b)	Receipts during year 1/ (c)	Consumption during year: For cu-base alloys (d)	Consumption during year: For all other uses (e)	Stocks at plant at end (f)	In transit to plant at end (g)
Special high grade (SHG)						
High grade (HG)						
Intermediate (INT)						
Brass special (BS)						
Select (SEL)						
Prime western (PW)						
Remelt (REM)						
Total slab zinc						
Foreign slab zinc: 2/						
A. Grade:						
B. Grade:						
C. Grade:						
D. Total foreign zinc						

Enter actual receipts. When the table will not balance due to reshipments, please explain: _____

Data referring to foreign slab zinc should be included in lines 1 thru 8. Please indicate the grade or grades separately on lines A, B, and C.

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2. CONSUMPTION OF SLAB ZINC BY USES DURING YEAR:

Products or uses for which slab zinc was put in process (a)	Slab zinc consumed: Itemized (b) (short tons)	Slab zinc consumed: Totals (c) (short tons)
1. Galvanizing of: 1/		
A. Sheet and strip		
B. Wire and wire rope		
C. Tube and pipe		
D. Fittings (for tube and pipe)		
E. Other (specify):		
F. Sub-total - Galvanizing		
2. Brass and bronze products:		
A. Sheet and strip and plate		
B. Rod and wire		
C. Tube		
D. Castings and billets		
E. Copper-base ingots		
F. Other copper-base products		
G. Sub-total - Brass and bronze		
3. Zinc-base alloy:		
A. Die castings		
B. Stamping dies		
C. Zinc alloy rod		
D. Slush & sand castings, etc.		
E. Sub-total - Zinc-base alloy		
F. Zinc-base alloy ingots, etc.		
4. Rolled zinc:		
A. Sheet and strip		
B. All other forms		
C. Sub-total - Rolled zinc		
5. Zinc oxide:		
6. Other (please specify):		
A.		
B.		
C.		
D. Sub-total - Other		
7. Total - all zinc put in process		

1/ Indicate process and percent of total zinc consumed in galvanizing used for each: Hot dip _____ %, Electrogalvanizing _____ %.

_____ (Signature)

_____ (Official position)

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Budget Bureau No. 42-R188.1
Approval expires August 31, 1946

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON

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DEPARTMENT OF THE INTERIOR
and FEDERAL WAR AGENCIES
ONLY

CONSUMPTION OF SLAB ZINC IN CALENDAR YEAR 1945

Please indicate any change necessary for correct name and address.

Please reply to the following questions and return the schedule promptly to the Bureau of Mines in the closed envelope which requires no postage. If you do not have exact data requested please enter best estimates possible and mark "Estimated". Kindly submit a separate report for each plant. Additional schedules mailed on request.

PLEASE READ AND USE THE SEPARATE INSTRUCTION SHEET.

cation of plant: State _____ City or town _____

RT I. CONSUMPTION AND STOCKS OF DOMESTIC AND FOREIGN SLAB ZINC EXCLUSIVE OF SCRAP & ALLOYS

List all figures in tons of 2,000 pounds (a)	Stocks at plant at beginning (b)	Receipts during year 1/ (c)	Consumption: For copper-base alloys (d)	Consumption: For all other uses (e)	Stocks at plant at end (f)	In transit to plant at end (g)
ction 1: Domestic & Foreign						
. Special high grade (SHG)						
. High grade (HG)						
. Intermediate (INT)						
. Brass special (BS)						
. Select (SEL)						
. Prime western (PW)						
. Remelt (REM)						
. Total slab zinc						
ction 2: Foreign 2/						
Grade:						
Grade:						
Grade:						
. Total foreign zinc						

Enter actual receipts. When the table will not balance due to reshipments, please explain: _____

Data referring to foreign slab zinc should be included in lines 1 through 8 in section 1. Show data for each grade of foreign zinc and specify grade in space provided.

PLEASE REPLY TO THE QUESTIONS ON THE BACK OF THIS SCHEDULE

(Over)

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PART II. CONSUMPTION OF SLAB ZINC BY USES DURING YEAR:

Products or uses for which slab zinc was put in process (a)	Slab zinc consumed: Itemized (b)	Slab zinc consumed: Totals (c)
	(short tons)	(short tons)
Section 1 - Galvanizing of: 1/		
A. Sheet and strip		
B. Wire and wire rope		
C. Tube and pipe		
D. Fittings (for tube & pipe)		
E. Other (specify)		
F. Sub-total - Galvanizing		
Section 2 - Brass & bronze products:		
A. Sheet and strip and plate		
B. Rod and wire		
C. Tube		
D. Castings and billets		
E. Copper-base ingots		
F. Other copper-base products		
G. Sub-total - Brass & bronze products		
Section 3 - Zinc-base alloy:		
A. Die castings		
B. Stamping dies		
C. Zinc alloy rod		
D. Slush & sand castings, etc.		
E. Sub-total - Zinc-base alloy		
F. Zinc-base alloy ingots, etc.		
Section 4 - Rolled zinc:		
A. Sheet and strip		
B. All other forms		
C. Sub-total - Rolled zinc		
Section 5 - Zinc oxide		
Section 6 - Other:		
A. Slush castings (other than zinc-base alloy)		
B. Wet batteries		
C. Desilverizing lead		
D. Light metal alloys		
E. Miscellaneous (please specify)		
F. Sub-total - Other		
Section 7 - Total all zinc put in process		

1/ Indicate process and percent of total zinc consumed in galvanizing used for each: Hot dip _____%, Electrogalvanizing _____%.

_____ (Signature)

_____ (Official position)

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